

Hitchcock's ⁶³⁵² ₄₄ Machine Tool Blue Book

JANUARY, 1936

THIRTY-FIRST YEAR



PROMPT
DELIVERY
FROM
STOCK

COLLETS FOR YOUR LATHES AND MILLING MACHINES

Attractive Prices—Ask For Catalog No. 35

styles in stock for Hendey, American, Monarch, Hardinge, Rockford, Sidney, Pratt & Whitney, South Bend, LeBlond, Springfield, Cincinnati, Sebastian, Etc., Lathes.

styles in stock for Van Norman, Hardinge, Burke, Becker, Etc., Milling Machines.

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PUBLISHED AT 508 So. DEARBORN ST. CHICAGO

The Saw of
Tomorrow



**for
Big Work**

especially designed
for

Steel Mills,
Warehouses,
Forge Shops,
Die Shops,
and all other heavy
duty large size work.

**The NEW
MARVEL
Number 18
Hack Saw**

a giant saw

Here is a new thing in saws, especially designed for the larger sizes and tougher alloy steels of *today* and *tomorrow*. This new saw introduces two important new features in power saws (1) The roll stroke (a new action similar to the chip-clearing action of a carpenter's hand saw) that ends "dragging" of blade through the cut; and (2) New *low pressure* hydraulic feed — so simplified that anyone can understand, operate and maintain it. This new giant saw sets a new standard and a pattern for the saws of tomorrow.

Write for Bulletin 18



ARMSTRONG-BLUM MFG. CO.
341 N. Francisco Ave., CHICAGO

S. S. WHITE Super-Quality CUTTING and GRINDING TOOLS

FLEXTOOLS

FLEXARMS

BURS

DRILLS

ROTARY
FILES

ABRASIVE
POINTS
DISKS
WHEELS

FLEXIBLE SHAFT DRIVEN
TOOLS AND EQUIPMENT

WRITE
for
CATALOG
TA

...They'll help you cut your 1936 production costs

Because of their extra fine quality and accurate construction, they cut faster and cleaner and last longer than the ordinary run of similar tools. This assures you of better work as well as economy. CATALOG TA shows the wide range of shapes and sizes.

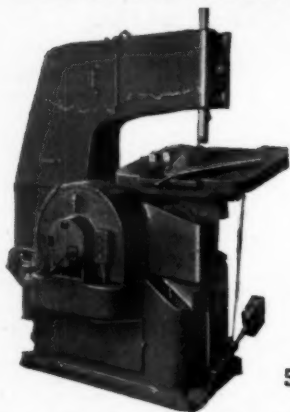
S. S. WHITE FLEXTOOLS
(small, portable, flexible shaft-driven outfits, complete with motor and handpiece) will save time and labor for you on a hundred and one different shop operations such as die-sinking, drilling, grinding, polishing etc. Every shop can profitably use at least one. CATALOG TA shows the different types and sizes.

*Your request brings a copy of CATALOG TA
with price list included. Write today.*

● **The S. S. WHITE DENTAL MFG. CO.** ●
INDUSTRIAL DIVISION

10 East 40th St., Room 2310H, New York, N. Y.

The New GROB Open End BAND SAW



for
INTERNAL
and
External
Sawing

No Welding

Electrically
Controlled

Cutting Speeds
50-75-100-150 F. P. M.

Write for Circular

GROB FILING MACHINE

Type B-3
BENCH MODEL

\$95.00

Motor & Switch Extra

Simply constructed.
easy to operate. Makes
smooth, straight, clean
cuts with speed and
accuracy.

Larger Sizes
Also Available

*Write Today for
Complete Information*



GROB BROTHERS

9700 National Ave.,

West Allis, Wisconsin

Hitchcock's Machine Tool Blue Book

**Selected
Circulation**

**20,000
Monthly**

JANUARY, 1936

THIRTY-FIRST YEAR

30 Years of Service

The December issue of the "Blue Book" completed 30 years of practical service.

To our readers we extend our heartiest wishes for a year of greater achievement and prosperity, with the hope that they may find the "Blue Book" even more useful than ever.

To our advertisers we give our sincere thanks for their loyal support, in return for which we have endeavored to give them full value received.

But the past, with its trials and tribulations, is behind us. We are now looking to the future with hope and confidence.

Based upon the business of 1926, the sale of machine tools and other shop equipment is practically normal. The outlook for 1936 is for a further stepping up in demand.

Now is the time, if ever, for the manufacturers of metal-working machinery to tell the world what they make. Turn to pages 10 and 11 in this issue, which tell how that may be done most effectively for every dollar expended.

THE PUBLISHERS

Published By

Hitchcock Publishing Co.

508 S. Dearborn St.,

Chicago, Ill.

Consult the Classified Finding Index for your requirements

THE LAST WORD IN ADVANCED GRINDERS

Setting new standards of efficiency, convenience and safety, this new complete line of Delta Grinders is something radically better than any grinder ever before presented. Wheels are balanced to within 1/100 of an inch-ounce. The new Twin-Lite safety shields offer perfect vision on each side and the face of the wheels, double seal ball-bearings are lubricated for life. Accurate tool supports, adjustable spark guards, swinging water pots—every feature has been considered to make these grinders the most efficient yet developed for all-around shop work. And best of all they are priced amazingly low.

SPECIFICATIONS

WHEELS: Highest grade 7 in. Carborundum, precision balanced. $\frac{3}{4}$ in. face $\frac{3}{8}$ in. hole. 60 grit, grades J. & K.

SAFETY SHIELDS: Safety Glass. Two bakelite sockets in each shield for bayonet base bulbs. Armored cable. Toggle switch wired to lamps.

GUARDS: Wheel guards meet all safety codes. Built-in dust chute. Adjustable spark plugs.

TOOL SUPPORTS: Fully adjustable, permitting grinding on both sides and face of wheel. Precision-machined.

WATER POT: on swing bracket (bench models) or built-in (pedestal model). Ample size. Instantly detachable.

BEARINGS: Precision double-seal New Departure ball bearings. Lubricated for life.

BODY: Heavy, well-proportioned cast-iron. Extended end housings provide plenty of room around wheels.

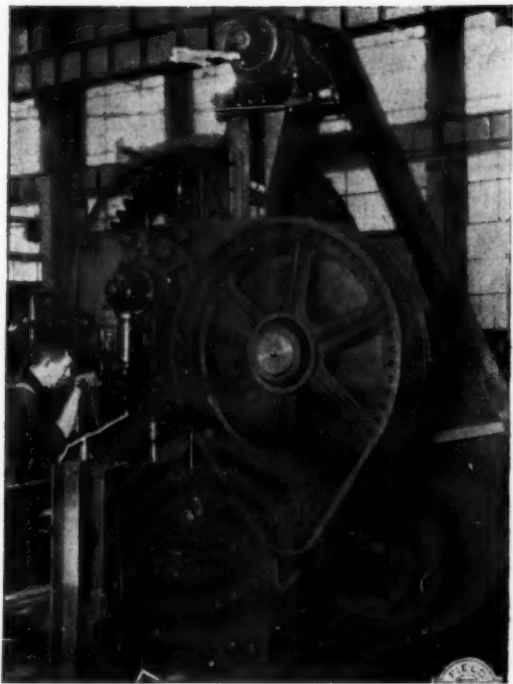
MOTOR: One-third H. P. 3450 R. P. M. built-in motor standard equipment on motor-driven bench model. Pedestal model either one-third H. P., single phase or one-half H. P., three phase, 3450 R. P. M.

Available in three different styles—belt-driven, motor-driven, and pedestal models, every one offering the same exacting specifications and the same exclusive features.

Delta Mfg. Co.

For name of nearest Delta dealer, full details, description, prices, write to the Delta Manufacturing Co., 604 East Vienna Ave., Milwaukee, Wisc.





"Buffalo" Billet Shears and Special Bar Cut- ters for Lower Costs—

Hundreds of plants are saving the cost of a Buffalo Billet Shear or special bar cutter annually with one or more of these machines—cut any shape—in capacities up to 8- $\frac{3}{4}$ " rounds. *Write for prices.*

BUFFALO FORGE CO., 161 Mortimer St.,
Buffalo, N. Y.

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

Made in three
sizes of single
and multiple
spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

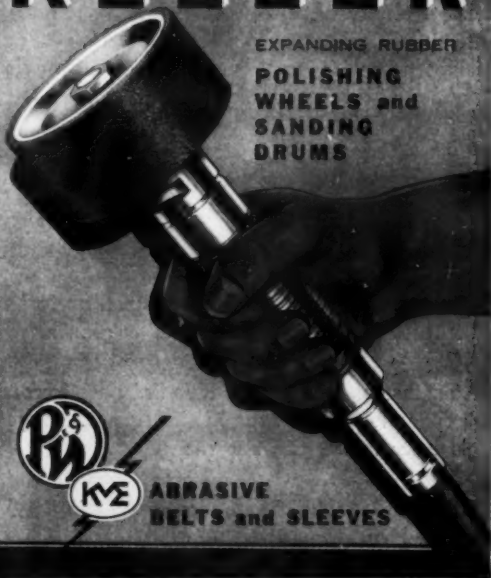
Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

KELLER

EXPANDING RUBBER
POLISHING
WHEELS and
SANDING
DRUMS



ABRASIVE
BELTS and SLEEVES

SEND FOR THIS BOOK

PRATT & WHITNEY CO.
HARTFORD, CONN.
KELLER DIVISION

The Growth of the "Blue Book"

In the past year the "Blue Book" showed a gain of 33 1/3 per cent in advertising over 1934.

This issue, which is the first in 1936, shows another increase of between 55 and 60 per cent over the corresponding month in 1935. This is a gain of over one-half.

Enough new business is already signed up to begin in February to show a further healthy growth.

A number of "Blue Book" advertisers are increasing their space for 1936—two of them from half pages in single color to full pages in two colors.

Others who advertised spasmodically in 1935 as "feelers" have given us term orders for 1936.

The above is simply a plain statement of uncolored facts, which speak for themselves. At least partial reasons for the healthy growth of the "Blue Book" are given on the following page.

Hitchcock Publishing Company

And Some Reasons For It

The main reason why the "Blue Book" is enjoying a healthy growth is because it produces results.

Another reason is that the water has been squeezed out of its rates.

The publishers believe they are safe in saying that it gives more—much more—practical advertising for each dollar expended than any other medium in its field.

Their policy has not been to charge all the traffic will bear, but rather to give to the advertiser the utmost of service for the amount invested.

The 20,000 circulation of the "Blue Book" is excellent. Besides other constant research work, it is checked annually with Dun and Bradstreet for responsible ratings. It also includes an extensive circulation to key men in large plants.

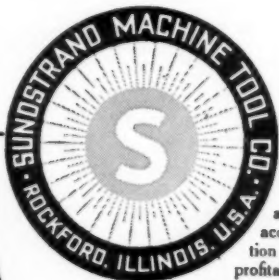
Manufacturers of machine tools and allied products who place the "Blue Book" at the top of their 1936 schedule will be well repaid.

508 S. Dearborn St., Chicago, Ill.



BENCH CENTERS

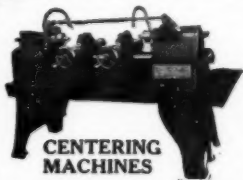
Save time and money in tool-rooms, inspection departments, repair shops, production departments and garages. Accurate, compact, portable. Adjustable heads. Quick-acting spindle. Seven sizes. Low price. *Write, today, for details.*



BALANCING TOOLS

Made in 5 sizes, with capacities from 800 lbs. to 24,000 lbs. Others for propellers, flywheels, pulleys, etc.

No. 56 illustrated, others available. Fast, accurate, an operation saver, a mighty profitable investment.

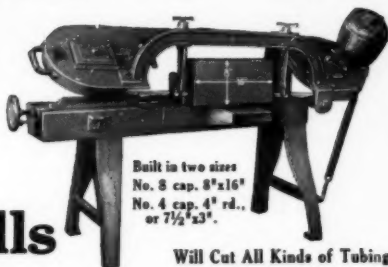


CENTERING MACHINES

These Sundstrand tools, like our Lathes and Milling Machines, cut costs and make work easier. **INVESTIGATE!** Address our Dept. H for details.

Reduced Labor Time Costs

with



Built in two sizes
No. 3 cap. 8"x16"
No. 4 cap. 4" rd.,
or 7 1/2"x3".

Wells

Will Cut All Kinds of Tubing

Metal Cutting Band Saws

WITH 50% faster metal cutting and no lost time in adjusting material or blade, enthusiastic users tell us they are able to pay for this simple dependable machine from savings made on time and labor costs. Using the band saw principle of continuous cutting, excessive friction is eliminated and the saw can be operated at high speed without the use of coolant. Long blade life as there are no sliding surfaces in a band saw and no wearing to make the blade cut untrue.

DEALERS WANTED

99% of trial installations have produced sales.

Wells Band Saws build up volume and add to your profits. Write today for details!

—Economical—

Simple to operate, sturdy construction, ability to cut all kinds, shapes, sizes of metal up to the capacity of the machine, make the Wells Band Saw an invaluable tool for maintenance and production work. Low first cost enables every metal working plant—large or small—to take advantage of the savings offered by the unit.

Send for the illustrated booklet today

WELLS MANUFACTURING CORP.

315 Seventh Ave.,

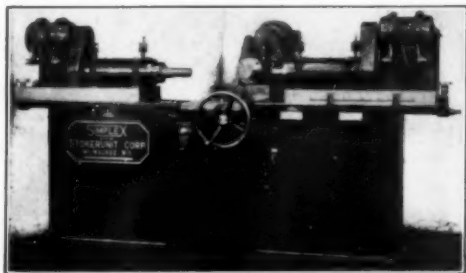
THREE RIVERS, MICHIGAN

IMPROVEMENTS IN ROCKFORD INCLINABLE PRESS

The Rockford Iron Works, Rockford, Ill., have made several important improvements in their No. 51½R inclinable open back punch press. One of these improvements is a new locking device consisting of a split plug and draw-bolt which lock the adjusting screw to the connecting rod. This replaces the old familiar saw slot which allowed the connecting rod to be squeezed on the adjusting screw.

Another improvement is an alloy steel crankshaft which has both the brake collar and the clutch collar forged in one piece. This press has a capacity of 56 tons. The fly-wheel type weighs 7,700 pounds and the single geared type 8,950 pounds.

SIMPLEX PRECISION UNIT BORING MACHINE



The Simplex Precision Unit Boring Machine manufactured by the Stoker Unit Corporation, 5325 W. Rogers St., Milwaukee, Wis., provides for precision boring of several holes on different faces of a part simultaneously. The elements of a standard type precision boring machine are merely rearranged to operate all at one time without losing accuracy or flexibility of setup.

The machine has a heavy cast bed with either two or three sets of vee and flat ways, each carrying a platen to support and guide the spindles. One or more spindles of suitable size can be mounted on each platen. A feed mechanism driven by an individual motor drives

(Continued on Page 16)

This New 1936 Model Genuine South Bend

LATHE

No Down Payment
3 years to pay

\$75⁰⁰

Less
Motor Drive



9 $\frac{1}{4}$ " x 3' Workshop Bench Lathe with Horizontal Countershaft, $\frac{1}{4}$ h.p. reversing motor and switch, and belting as shown. *Nothing Down, 3 years to pay.*

\$98²⁵

This New 1936 model 9" x 3' Workshop Bench Lathe is a back-geared, screw cutting precision lathe, capable of handling the finest, most accurate jobs in manufacturing, in the tool room and laboratory.

Lathe may be fitted with draw-in chuck and collets, grinder, taper attachment, milling attachment and 34 other attachments for all machine shop operations.

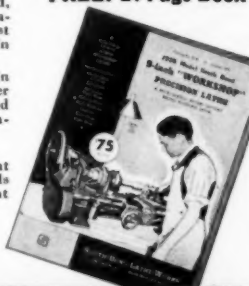
Write for Catalog 15-R

Shows this lathe in eight different drives and four bed lengths. Tells about 30-day trial and payment terms. *Sent Free, Postpaid.*

**SOUTH BEND
LATHE WORKS**

877 E. Madison St.,
South Bend, Ind., U.S.A.

FREE! 24 Page Book



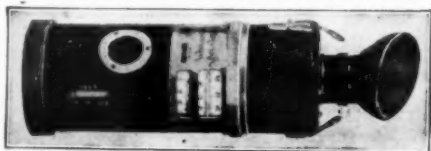
SOUTH BEND Precision LATHES

the feed through pickoff gears to provide changes as required. For manual cycle the platens are brought to the work by the handwheel and at the start of the cut a limit switch starts the spindles and engages the feed. A second switch stops the feed at the end of cut and platens are returned to starting position by handwheel. In the automatic cycle the electrical control operates a traverse motor which advances the platens to the feeding position and also returns them after the cut, thus establishing full automatic control. Each platen has individual adjustment in relation to the work, but normally all feed at the same rate. Spindle speeds can be arranged to suit requirements.

Specifications

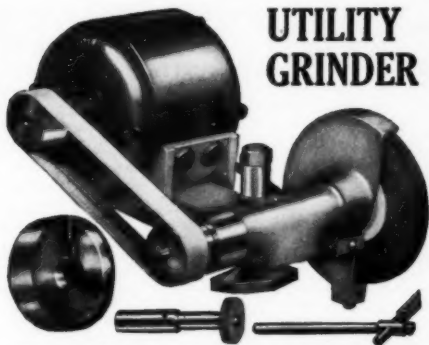
Range—feed length—maximum	12"
Diameter holes	$\frac{3}{8}$ " to 8"
Number of spindles that can be used.....	6—#1 or 1L 3—#3
Spindle speed range.....	300 to 5000 R.P.M.
Spindle carrier width.....	13"
Space for fixture (standard).....	16" square
Centerline spindle to top of table (std.).....	6.250 min. 12" max.
Height from floor to table.....	32"
Overall length of machine.....	76"
Motors specified to suit job	
Net weight	4800 #
Shipping weight—domestic	5400 #
—foreign	5750 #

THE NEW PYRO OPTICAL PYROMETER



manufactured by the Pyrometer Instrument Co., 102-105 Lafayette St., New York, is a totally self-contained, rugged, dust-and-fool-proof unit for steel plants, rolling mills, foundries, laboratories and general plant uses.

(Continued on Page 18)



UTILITY GRINDER

Complete as above \$65.00

EXTERNAL or INTERNAL GRINDING on a Lathe, Shaper or Planer. Make your old Tool and Cutter Grinder a self contained unit, replace the spindle head with a Utility Grinder, also can be adapted to internal Grinding Machines.

MOTOR—Constant speed, $\frac{1}{4}$ H. P., heavy duty, Ball Bearing 3500 R. P. M. No metal contact between motor and bracket. Rubber insulation absorbs motor vibration.

GRINDING SPINDLE—Alloy steel, standard precision ball bearings, spindle adjustment automatic regardless of temperature.

E-Z SET BORING TOOL



Made in 3 Sizes

\$13.50 to \$27.50 with shank and bit.

COMPACT, RIGID. Small body, large boring capacity. Adjustment actuated by a worm. Straight or taper shank. Adjustable to Jig and Fixture, Production or Maintenance work.

See your dealer or communicate direct with us.

Sold on a Money Back Guarantee

F. A. MAXWELL COMPANY
8444 Broadway, Cleveland, Ohio

Its advanced and unique features, its compactness, ease of operation, etc., enable the operator by means of the new concentrated small test mark to measure quickly and accurately the temperature of MINUTE SPOTS, FAST MOVING OBJECTS or of the SMALLEST STREAMS. It is DIRECT reading, there are no correction charts and curves, no accessories. A MASTER LAMP is furnished with each instrument, outside of two service lamps, enabling the operator to CHECK AT ANY TIME THE ACCURACY and, if necessary, recalibrate the service lamps on the spot within a few minutes' time. There is no upkeep connected with its operation; temperature readings take but 2 or 3 seconds and the instrument is furnished complete with Master Lamp, two service lamps, leather bound steel carrying case and straps. Its weight is about 3 lbs.

PYRO can be furnished with SINGLE RANGE, DOUBLE RANGE, TRIPLE RANGE or special FOUNDRY TYPE, and a copy of our NEW catalog No. 70 will be sent to anyone interested upon request.

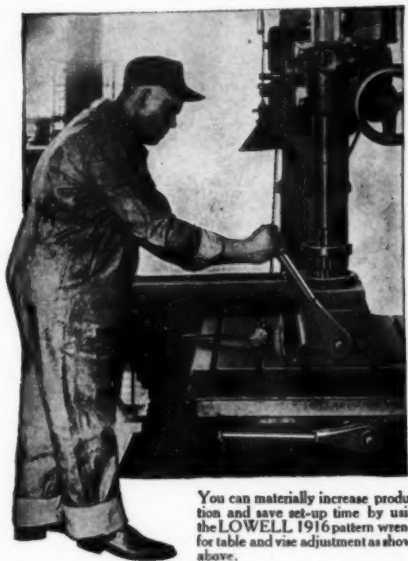
THE 1916 PATTERN LOWELL WRENCH



The Reversible Ratchet Wrench pictured herewith is manufactured by the Lowell Wrench Co., Worcester, Mass., and is known as their 1916 pattern. The big feature of this particular wrench is the locating of the reversing mechanism at the end of the handle. This is not only a time-saving feature, but a safety factor as well. A half-turn of the knurl at the end changes the action from right to left hand or vice versa.

The wrench is sturdily built of specially treated steel with crushing action upon the pawls, absolutely the strongest possible construction. It is specially adapted to working in confined quarters and on work that has to be handled in a machine vise. A great deal of time can be saved by having one of these wrenches fastened to the screw of the vise for tightening and loosening the jaws. There are no exposed parts for dirt to enter. Complete information on this wrench and others designed for heavier work may be obtained by writing directly to the Lowell Wrench Co.

(Continued on Page 20)



You can materially increase production and save set-up time by using the **LOWELL 1916** pattern wrench for table and vise adjustment as shown above.

The 1916 Pattern **LOWELL** Reversible Ratchet **WRENCH**

This wrench is the only Reversible Ratchet Wrench on the market that has the reversing mechanism at the end of the handle or lever, with the crushing action on the pawls, absolutely the strongest possible construction. Easily reversible—it takes only one-half of a complete turn of the knurl at the handle end to reverse action from right to left hand. This is a great safety factor also, as there is no danger of the operator's hand coming in contact with cutters or other parts of the machine. Try our "1916's" in your shop—their actions will speak louder than our words.

*Write Today for a Copy of the
Complete **LOWELL CATALOG "T"***

LOWELL WRENCH CO.
WORCESTER, MASSACHUSETTS, U. S. A.

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THE NEW PYRO SURFACE PYROMETER



The Pyrometer Instrument Co., 102-105 Lafayette Street, New York, recently placed on the market a NEW SURFACE PYROMETER line intended for all industries where SURFACE temperatures are to be measured quickly and accurately, be they flat or curved, stationary or moving surfaces.

The new instrument is self-contained, extremely rugged, quick-acting, accurate and scientifically designed for heavy duty work over a long period of years. The instrument can be furnished in type "A" for flat surfaces or in type "B" for curved surfaces. Due to the patented clamping device, contact and reading of the actual temperatures no longer have to be made simultaneously, as the indicating needle will stay fixed at the highest temperature. While contacting the thermo-couple, a red button on the indicator housing is pressed and held for a few seconds. The pressure on the button is released before removing the thermo-couple from the surface being measured, and in so doing a fixed indication of the temperature measurement is obtained. Another pressure on the red button causes the pointer on the indicator to swing back to its zero setting.

The Type "A" for flat surfaces can be furnished with scale ranges from 30 to 400° F., 30 to 600° F., 100 to 900° F. and 100 to 1400° F. The BOW type or "B" is for curved surfaces and is furnished with scale ranges: 30 to 250° F., 30 to 400° F., 30 to 600° F., 100 to 900° F. and 100 to 1000° F. Extension handles can be furnished to meet individual requirements. A new illustrated catalog, No. 60, will be sent on request.

(Continued on Page 22)



**TAP 2,000
9/36 THREADS
PER HOUR IN
STEEL WITH
ATLAS
DRILL PRESS**

**SMALL
INVESTMENT
DOUBLES
PRODUCTION**

The Reynolds Electric Company, prominent electrical product manufacturers of Chicago, find Atlas Drill Press equipment efficient and economical. Manufacturing steel switch parts, they are tapping between eighteen hundred and two thousand 9/36 threads per hour with an Atlas Model 70. The press is running full time, eight hours a day. Its purchase represented a very large saving, the price being only a fraction of other equipment considered.

ATLAS DOES 5 HOUR JOB IN 2 HRS.

On this same Atlas, Reynolds is now doing in two hours a tap job that formerly required five hours on a regular tapping outfit.

Atlas Drill Presses are standing up under this and many other similar jobs and maintaining their accuracy. They will do the same in your plant. Made in four sizes, bench and floor models. Prices range from \$14.45 to \$39.45. See them at your jobbers or write direct for new 1936 catalog of LATHES and DRILLS.

ATLAS PRESS COMPANY

1850 N. Pitcher St., Kalamazoo, Mich.

Complete display at Atlas Sales Co., 35 E. Wacker Dr., Chicago

MODEL "C" CHICAGO ELBOW MACHINE



The Ingels Elbo Machine Corp., 2638 Fullerton Ave., Chicago, announce a new Elbow forming machine..

This machine will make 500 elbows in an eight-hour day with two men operating. The process is very simple. The jig is slipped over the finished pipe. In one revolution of the pipe the cutting and beading of a segment is done. The segments snap together and in another revolution they are closed. It takes less than two minutes to make an elbow.

The beads in the elbow are "locked"—one inside the other. No amount of rough handling will separate them. They are easy to adjust and smoke leaks are minimized to the utmost. They are the only "locked bead" elbows made. Other elbows have the segment edges turned back to hold them together.

(Continued on Page 24)

RIGHT THROUGH ANY PIPE!



A **RIDGID** Pipe Cutter rolling right through any pipe. A No. 1 and 2, capacity $\frac{1}{8}$ " to 2".

And that's a **RIDGID** Vise holding the pipe—with no-mar jaws.



This is the thin super-steel wheel blade that does several times as much work as old-style cutter wheels.

IN a perfect circle, its alignment true, its powerful steel-reinforced housing holding it true, this **RIDGID** Cutter rolls through any pipe in a few easy turns—and leaves practically no burr.

But the secret of its unusual performance lies in its distinctive wheel blade. Coined out of sheet tool steel, hammered to shape, heat-treated and then fitted with a cast-in reinforced hub, this thin blue blade provides the cutting stamina that means far more cuts per blade—with economy and extra use-satisfaction to the user.

Try a **RIDGID** Cutter and you'll quickly see the difference.

●
Your Jobber has them
●

The Ridge Tool Co., Elyria, Ohio, U.S.A.

RIDGID

Pipe Wrenches

Cutters

Threaders

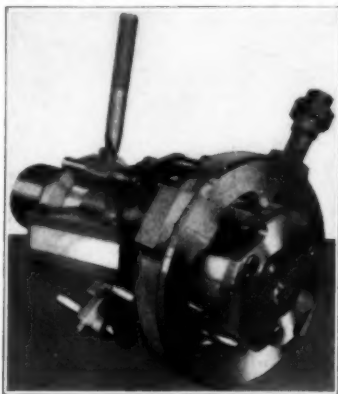
Vises

On every thousand 8-inch 26-gage elbows there is a saving of around 500 pounds of metal—or about enough saving in metal to pay labor costs.

This machine will make Blow-Pipe as well as Smoke-Pipe elbows. No solder is needed on the head seams.

While Model C is designed for speed, its bronze worm gears and bronze bearings give it long endurance under high production.

OIL TYPE TRIP RING FOR COLLAPSIBLE TAPS



When tapping any threads, particularly long threads of large diameters in steel, it is very essential to maintain an ample supply of lubrication to dissipate the heat and wash away the chips.

To insure a sufficient supply of lubricant for its line of collapsible taps the Landis Machine Company of Waynesboro, Pa., has placed on the market an oiling type of trip ring to replace the conventional type of ring usually employed on a collapsible tap. The accompanying illustration shows one of these rings applied to a 6" LANDIS Style LM Receding Chaser Collapsible Tap. The ring consists of a hollow housing with steel plates

(Continued on Page 26)

KRW Hydraulic and Sensitive ARBOR PRESSES

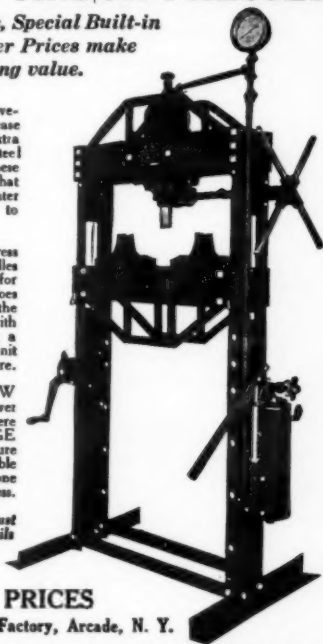
New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.

THE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this KRW feature as a time and labor saver can be appreciated. Also there is **NO EXTRA CHARGE** for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

Write for special circular, just off the press, giving full details and specifications of all KRW Arbor Presses.



PRICES

F. O. B. Factory, Arcade, N. Y.

- | | |
|-----------------------------------------------------------------------|----------|
| No. 37—35 ton Hydraulic and Sensitive Arbor Press (hand operated) | \$128.00 |
| No. 37B—35 ton Hydraulic and Sensitive Arbor Press (air-oil operated) | 128.00 |
| No. 37E—50 ton Hydraulic and Sensitive Arbor Press (hand operated) | 150.00 |
| (Can also be furnished in air-oil operated at same price) | |
| No. 37F—70 ton Hydraulic and Sensitive Arbor Press (hand oper. only) | 275.00 |
| Gauge and fittings, \$15.00 extra on all presses. | |

K. R. WILSON

10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPARTMENT

90 West St., New York, N. Y.

WEST COAST BRANCH

722 Mateo St., Los Angeles

mounted on the front and the back, thus forming a reservoir for holding the lubricant. On the smaller sizes of rings the housing is made of cast iron and in order to lessen the weight the housing for the larger rings is made of aluminum. The front ring which contacts the work to effect the receding and collapsing action of the tap is made of steel and case carburized to resist wear.

Holes are placed diagonally in the housing through which a stream of oil is forcibly directed upon each chaser throughout the entire length of the cut, thus insuring ample lubrication at the point where it is needed.

A supply pipe with union connection is provided for attaching the supply hose. The housing of the trip ring remains stationary while the front and back plates will turn with the tap if the tap must revolve for tapping the thread.

These rings are available for use with LANDIS Style LM Receding Chaser and Style LT Collapsible Tap 6" size and larger.

NEW "STA-KOOL" DIAMOND HOLDER

A combination water and air cooled holder for truing diamonds has been developed by J. K. Smit & Sons, Inc., 157 Chambers St., New York City. In the truing of grinding wheels one of the principal problems to cope with is heat. The heat intensity developed in the truing process is sudden and severe and even though a stream of water is directed on the point of the diamond during the operation, it acts as a coolant only for the point and has no effect upon four-fifths of the diamond which is imbedded in the metal holder. This greatly endangers the stone as the amount of heat carried away by the metal is negligible.

The "Sta-Kool" holder is so designed that the stream of water directed on the diamond point is carried by channels into the holder immediately in back of the diamond, thus greatly prolonging its life. The series of channels are spaced at certain angles relative to the position of the diamond in the holder. This holder has the advantage in dry grinding, that cooling air circulates through these same channels as the water does in wet grinding.

(Continued on Page 28)

... For Stacking and Storage of Boxes and Pans USE STACKRACKS



Write for circular.

*For prices specify
outside dimensions of
boxes to be stacked.*

*State approximate
weight of contents.*

Patents Pending

Saves Space, Time, and Labor

Store boxes and pans in an orderly manner—one on top of the other. Each stored unit is easily and quickly accessible as the top one...each stored unit can be moved, changed or replaced without disturbing any other.

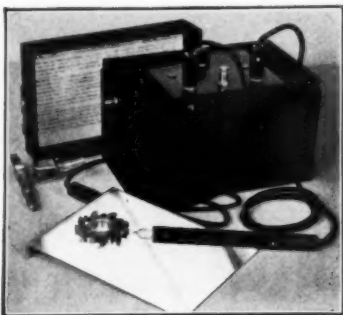
The STACKRACK is ideal for use on assembly floor, in machine shop, under work bench, and for stockroom control. In fact, STACKRACKS can be used to advantage wherever you have a storage and stacking problem. STACKRACKS are made in single units. They are constructed of angle and formed steel parts, welded together. Each rack automatically locks securely in position on the rack underneath.

**STACKBIN
CORP.**



PROVIDENCE, R. I.

THE NEW ELECTRO-GRAPHIC GRAVER



—writes, marks, letters and engraves on any metal surface from softest to hardest—light, medium or heavy lines. Made by Electro-Graphic Graver Co., Factories Bldg., Toledo, O., who state it is more efficient and covers greater range of work than other known instruments of this class.

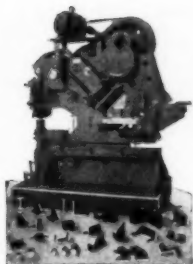
This modern Graver operates on a.c. at 110 volts and 60 cycles. Power consumption is about 75 watts. It includes a transformer with three output terminals, and a 5-point dial switch to form a combination of 15 stages of current supply from which choice can be made. Adjustment is also provided in the solenoid core mechanism. An illustrated descriptive circular will be sent you on request.

NEW STEEGE CATALOG

The W. L. Steege Machinery Co., 18 S. Clinton St., Chicago, announce that their new catalog describing their complete line of Universal Motor Drives and Gear Box Drives is now available to the trade, simply for the asking. This catalog is complete with illustrations showing the simple method which will change a cone-driven machine to a more efficient motor-driven tool.

The Steege Junior Motor Drives are adaptable to any Cone Pulley machine or tool. Made in sizes for motors from $\frac{3}{4}$ h.p. to 5 h.p.

(Continued on Page 30)



PELS

Combination Punch, Plate Shear, Angle, Bar and Tee Cutter

With Built-In Notcher and Copper

A complete fabricating shop in one small unit

Indispensable for structural, architectural, ornamental iron work and general maintenance and repair work of industrial plants.

CUTS Plates of any length and width; Flats; Rounds and Squares; Angles and Tees square and on mitre; Perfect cuts obtained.

PUNCHES Plates and Structural Shapes in webs and flanges; Full Floating Punch Head.

COPEs and **NOTCHES** angles, etc.

Guaranteed Unbreakable Steel Plate Frame

Built in Eight Sizes

HENRY PELS & CO., Inc. 90 West Street,
New York, N.Y.

OLIVER of ADRIAN Die Making Machines

—save 50 to 60% of the labor on all sawing, filing and lapping operations. Saw to the die outline from advantageous starting points, thereby eliminating unnecessary sawing.

No saws to braze or special parts to buy.

Machines available for all classes of work in materials up to 3" thick and at a price within the reach of every shop.



Send for Oliver literature today; there is no obligation.

OLIVER INSTRUMENT COMPANY
1408 Maumee St., **ADRIAN, MICHIGAN**

NEW NIAGARA SQUARING SHEARS

The Niagara Machine & Tool Works, Buffalo, N. Y., announce their new line of foot-operated squaring shears, to be known as "Series F" and used for cutting No. 16 gage metal.

The line has been designed to be operated with minimum effort and to provide easy accessibility as well as smooth, accurate shearing. A steel hold-down, operated manually by self-locking eccentrics, is one of the features. It exerts heavy pressure on the sheet metal, holds it securely, assuring accurate shearing. And as it does not block the view of the cutting edge it allows the operator to shear along any line.

Rigid backing for the knife is provided by a steel cross-head. On the shears for cutting lengths of 96 and 120 inches a patented parallel-screw back gage is furnished, which can be easily adjusted from either end of the machine. A graduated steel scale permits the gage to be adjusted without using a rule.

The Series F Shears are equipped with shear knives and back, front, side and bevel gages. They come in cutting lengths of from 36 to 72 inches for No. 16 gage material and foot-operated shears in 8 and 10 foot cutting lengths for No. 18 gage material.

NEW LINCOLN ELECTRODE FOR WELDING 25-12 STAINLESS STEELS

A new arc welding electrode for welding the group of stainless steels belonging to the 25-12 variety is announced by research engineers of The Lincoln Electric Company, Cleveland, Ohio. Because of its higher chrome content the new electrode is particularly advantageous for welding stainless clad steels.

This new electrode, known as "Stainweld B," provides weld metal of the same characteristics as steel containing 25 per cent chromium and 12 per cent nickel. The weld metal provided by the electrode has the high corrosion-resistance, high tensile strength and ductility possessed by the 25-12 alloy steels.

"Stainweld B" electrode is heavily coated, utilizing the shielded arc principle of producing welds free from oxides and nitrides, brittleness and porosity. The high quality of

(Continued on Page 32)

Beverly Throatless Shear

for Straight, Circular and Irregular Cutting

The special design of the Beverly makes it possible to turn the metal to *any* position, cutting *any* shape desired, without *any* distortion.

Made in two sizes—one weighs 16½ lbs. and cuts up to 14 gauge. Larger one weighs 33 lbs. and cuts up to 10 gauge.

Send for circular giving full details and low prices.

Beverly Throatless Shear Co.
3007 W. 110th Place, Chicago, Ill.



SHEAR CUT

Single and Double

END MILLS

THEY shear cut the metal instead of the old way of cutting. They'll cut faster, also leave that smooth finish you want. Why? It is the way they are ground.

Send for a new catalog showing other sizes and styles

**PROGRESSIVE TOOL
& CUTTER CO.**

FERNDALE, MICHIGAN

the weld metal produced is shown in results of tensile strength and accelerated corrosion tests. Tensile strength tests show that "Stainweld B" weld metal resists a stress of 95,000 lbs. per sq. in. Test coupons broke under this stress after the area of the weld metal had been reduced to make the failure come in the weld.

"Stainweld B" electrode, together with the well known Lincoln "Stainweld A" for 18-8 stainless steels, now makes it possible to arc weld practically any of the more extensively used stainless alloys. "Stainweld B" is available in $\frac{5}{32}$ and $\frac{3}{16}$ inch sizes in 11 inch lengths. It comes packed in 15 pound containers in the $\frac{5}{32}$ inch size and 10-pound containers for the $\frac{3}{16}$ inch size.

NEW GISHOLT RAM TYPE TURRET LATHES

The Gisholt Machine Co., Madison, Wis., have developed three new ram type turret lathes that are designed for high production work and small lot jobbing. They are identical in design and construction, differing only in size and capacity. They all incorporate automatic labor-saving devices that make for fast manipulation.

The bar capacity ranges from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches and the chucking capacity from 8 to 15 inches. Tapered roller bearings and hardened alloy steel gears are supplied throughout the machines, while the ways of the turret slide, saddle and bed are pieces of hardened steel, ground in place. The hexagon turret and its stop roll are automatically indexed with the back movement of the ram slide. As the ram slide goes forward to the work, the hexagon turret is automatically located and clamped in place. The operator does not need to take his hands from the pilot wheel to accomplish this cycle. A single lever movement accomplishes indexing, locating and clamping. A forward and backward movement of the lever indexes the toolpost ready for the next operation.

Selective gear transmission permits changes in spindle speed without passing through intermediate speeds and three levers control the twelve available speeds. The shift from a high to a low speed, as required in changing from drilling to reaming, or from turning to threading, is made through multiple-disk clutches without stopping the spindle. A single lever also controls shifting from forward to reverse. A very adequate oiling system is also provided.

(Continued on Page 34)

Nothing Grips Like a Diamond



SUTTON **DIAMOND** COLLETS GRIP

Are the only collets for screw machines that can give you the advantages of **DIAMOND SERRATIONS**

- Greater gripping power
- Elimination of slippage
- Less chucking strain
- Longer life and service

Send for Catalog No. 11-H showing full Sutton line of screw machine accessories

SUTTON TOOL CO., 2836 W. Grand Boulevard,
DETROIT, MICHIGAN



U. S. PAT.
1,992,600

ALLIGATOR TRADE MARK REG. U.S. PAT. OFFICE BELT CUTTER

You simply **PUSH** the knife through the belt. Makes a clean, square cut of any belt (except metal stitched) up to 8 in. wide. Combined guard and hold-down clamp holds belt immovable. Knife will make several thousand cuts and is readily replaceable. Used as illustrated or horizontally. Weight 4 lbs. and 3 ozs. net. Order through your distributor. \$10.00 in the U. S. A.

Sole Manufacturers

FLEXIBLE STEEL LACING CO.

4670 Lexington St., Chicago

In England at 135 Finsbury Pavement, London, E. C. 2

NEW TACKER HOLDS 1,000 STAPLES

A new vest-pocket size Stapler with a magazine which carries 1,000 staples in a single load and which, therefore, eliminates the inconvenience and time-waste of stopping to load after only a few staples have been applied, has been announced by the Paslode Company, 243-C North Bank Drive, Merchandise Mart, Chicago, Ill.

The small compact size of this Tacker makes it extremely convenient for use where the Tacker has to be carried around by the operator. It greatly increases the speed of attaching staples and makes its more constant use possible because of the infrequent necessity for reloading.

This Tacker has proven ideal for the great proportions of stapling uses, including the attaching of tags, labels and revenue stamps to shipments and products. Special attachments are available for shade and screen tacking, etc.

The machine is known as the Paslode Palmgren Thousand Load Tacker. The staples are furnished in a compact roll of 1,000, which are easily inserted in the Tacker magazine.

Ease of operation is another outstanding feature of this new Tacker. A light blow drives the staple securely into position. Unique features of mechanical construction eliminate the possibility of clogging. The large number of staples placed in the magazine at one loading marks one of the most revolutionary changes in Tacker design for a generation. The cost of the staples is thus reduced and since time is saved in operation and loading, the total cost of stapling is reduced materially.

NEW PRATT & WHITNEY MODEL "C" LATHE

The Pratt & Whitney Co., Hartford, Conn., announce a new model "C" Lathe which is to take the place of the Model "B" Lathe which they have manufactured for many years.

The new model is driven by a constant-speed motor, mounted on a hinged platform in the cabinet leg under the headstock. All electrical controls are located in the cabinet leg under the tailstock, except for a push-button station which is mounted on the quick change gear box and which is used for starting and stopping the motor.

(Continued on Page 36)

Motorize with Steege Drives

Equip Your Lathes, Shapers,
Millers, etc., with



Steege Drives

Easily
Installed **\$40.00** up

Write for Catalog

W. L. Steege Machinery Co.
20 S. Clinton St., Chicago

VICE

A good one for Driller,
Miller, Shaper, or Planer.

6", 9" and 12" Jaws

— DRILL — SPEEDER

OR
*H. S. Drilling
Attachment*

Increases
the Speed
3 Times



*Send for
Circulars
of ALL*

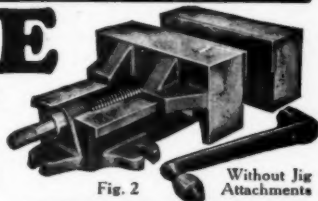


Fig. 2

Without Jig
Attachments

KNURL HOLDER

for Turret Lathe

Adjustable to any size within capacity.



Swivel
Lugs

Shank
to suit Turret

THE GRAHAM MFG. CO.
70 Willard Ave., PROVIDENCE, R. I.

An unusual feature of this lathe is that the bed and headstock have been built out at the rear to provide a "column headstock" which insures solid support for the driving pulley, takes the pull of the driving belt and does away with excessive overhang. Also, a larger surface area is provided thereby for the oil reservoir, so that the oil used for lubricating the spindle bearings and gears remains cool under continuous operation.

The spindle of the lathe is unusually heavy and is supported at three points. The quick change gear box provides sixty feeds ranging from 0.002 to 0.188 inch and sixty thread changes from 1 to 60 per inch, inclusive. Two sizes are now available having nominal swings of 14 and 16 inches. Each of these sizes are available in two lengths which provide center-to-center distances of 30 and 54 inches.

NEW KUTMORE ADJUSTABLE HOLLOW MILLS

A new line of High Speed Adjustable Hollow Mills, designed for small Automatic Screw Machines has been added to their regular line by the Kutmore Tool Company, 841 Lake Ave., Rochester, N. Y.

These mills are of very short and light construction but rigid enough to stand up under heavy strain. They come in two groups of three each, with the following cutting capacities:

The first group for the smallest machines:

No. 1-A from 0 to $\frac{1}{8}$ ", No. 1-B from $\frac{1}{16}$ " to $\frac{3}{16}$ " and No. 1-C from $\frac{1}{8}$ " to $\frac{1}{4}$ ". Shanks are $\frac{3}{8}$ " dia. $1\frac{3}{8}$ " long.

The second group for the larger machines:

No. 2-A from $\frac{1}{8}$ " to $\frac{1}{4}$ ", No. 2-B from $\frac{3}{16}$ " to $\frac{5}{16}$ " and No. 2-C from $\frac{1}{4}$ " to $\frac{3}{8}$ ". Shanks are $\frac{3}{4}$ " dia. 2" long.

Additional information will be furnished by writing direct to the manufacturer.

(Continued on Page 38)

VICTOR'S BARGAINS IN HIGH SPEED STRAIGHT SHANK END MILLS



These end mills are Standard with either right or left hand cut.

Diameter	Dimensions—Inches		Net Price	OUR PRICE
	Length of Cut	Length Overall		
1/8	5/16	1 1/4	\$1.40	\$.56
3/16	5/16	1 1/4	1.50	.60
1/2	1/2	1 3/4	1.70	.68
7/16	5/8	1 3/4	1.80	.72
1/4	5/8	1 11/16	1.80	.72
3/8	11/16	1 3/4	1.90	.76
7/8	3/4	1 13/16	2.10	.84
1/2	7/8	2 3/16	2.30	.92
1 1/2	1 1/8	2 1/4	2.50	1.00
1 3/4	1 1/4	2 3/8	2.70	1.08
2 1/4	1 1/2	2 1/2	3.00	1.20
2 3/4	1 3/4	2 5/8	3.50	1.40

Money Refunded If Not Satisfied

Send for Our General Catalogue

VICTOR MACHINERY EXCHANGE, INC.
251 Centre Street, New York, N. Y.

DORMAN TAPPING CHUCKS



3/8 Capacity	\$19.75
5/8 Capacity	\$19.75

Money Refunded If Not Satisfied

Send for Our General Catalogue

VICTOR MACHINERY EXCHANGE, INC.
251 Centre Street, New York, N. Y.

TRADE LITERATURE

"Materials Handling Equipment Parts" is the title of Catalog 417 (400 pages), issued by Jeffrey Manufacturing Co., Columbus, Ohio. Covers chains, sprockets, transmission machinery; spiral conveyor, elevator and conveyor parts, along with all other Jeffrey materials handling equipment parts. Gives specifications and list prices; presents pictorially line of materials handling equipment engineered, manufactured and erected by the Jeffrey company.

"When your temperature goes up—something's wrong"—a bulletin describing the Ideal Tel-Temp, a new type of inexpensive industrial thermometer, has recently been published by the Ideal Commutator Dresser Company, Sycamore, Illinois.

Of standard four-page letter size for easy filing, this bulletin contains much worthwhile information on a temperature determining device being marketed under the trade name, "Tel-Temp." Besides showing product illustrations, the bulletin contains many application photographs from installations in a number of different industries. These pictures show how the Tel-Temp is used to indicate temperatures on such machines as open and closed motors, generators, bus-bars, pump bearings and condensate pumps. One illustration that will be of particular interest to many shows this instrument installed on a ceiling-mounted motor so that operating temperatures can be read from the floor. The technical information discusses the advantages, from a practical standpoint, of using a temperature determining instrument such as the Tel-Temp on motors, bearings and other machinery. Copies of this bulletin can be had by writing direct to the manufacturer

The Clearing Machine Corporation, 6499 W. 65th St., Chicago, Ill., have issued a handsome booklet entitled "Clearing Cushions", illustrating and describing many new developments in power presses and power press auxiliary equipment, including air cushions, locking devices and cushioned press beds. They also have a bulletin giving details of their Duplicating Attachment, a device that can be attached to any standard milling machine and that will duplicate dies, patterns, models of all sorts, without interfering in any way with the ordinary work of the machine.

(Continued on Page 40)

RENU TOOL COMPANY

GRINDING SPECIALISTS

**THE ONLY TOOL SALVAGE FIRM
AUTHORIZED BY THE FACTORY
TO SALVAGE**

WELDON END MILLS

RENU INTO NEW

**YOUR OLD WORN OUT MILLING
CUTTERS, SAWS, END MILLS
DRILLS AND REAMERS**

6517 BRUSH ST., DETROIT, MICH.



For

**Machinists and Toolmakers
Diemakers, Modelmakers and
Metal Patternmakers.**

**General machine shop and
tool room use on tools, dies,
jig, fixtures and machined
parts.**

This "LAYOUT FLUID" has a considerable advantage over the old copper sulphate method, because the scribed lines have a pronounced contrast against the dark background—relieving eyestrain and allowing the workman to work accurately and easily to the desired layout. This compound may also be used to an advantage in layout work on brass, aluminum, stainless steel, tin, copper, etc.

With the use of the die blue layout fluid you do not have to polish the surface. Simply wipe surface fairly clean and brush on. **DRIES INSTANTLY.** This modern method of layout is a great time and money saver.

Four oz. Combination Brush-in-Can (for shop use) - - - 50c

One quart Sealed Handy Can (for stock room) - - - \$2.00

Dayton Rogers Manufacturing Co., 1845 E. Franklin Ave.,
Minneapolis, Minn.

TRADE LITERATURE

The Dumore Company, Racine, Wis., announce that they have secured an additional supply of the popular 24-page booklet entitled "1/10,000th of an Inch". Written by a well know authority, it is an interesting treatise on precision tolerances and contains a great deal of useful information.

They have also issued two new leaflets illustrating and describing their new "Vari-Speed" flexible shaft tool and the new No. 44 Dumore tool makers precision grinder. Copies of any or all of these publications may be obtained by writing directly to the Dumore Co.

R. G. Haskins Company, 4654 West Fulton St., Chicago, have just published a new general catalog No. 44, covering their line of flexible shaft equipment. In addition to complete specifications for the machines, this 40-page booklet also treats of the many applications of this type of equipment in the various industries, together with a large number of illustrations.

A portable electric drill, with a stainless steel drill gage built-in, is a recent addition to the line manufactured by the Stanley Electric Tools Division, 100 Elm St., New Britain, Conn.

A grinding machine that will use wheels that have been worn down on other machines is announced by the Ransom Grinding Machine Co., Oshkosh, Wis. Known as the No. 101, it is a double-end unit, operating at 3600 r.p.m.

The Buckeye Portable Tool Co., 23 West Apple St., Dayton, Ohio, have developed a new high frequency screw driver known as the Hercules No. 21-S. It is designed primarily for driving screws but can be applied for nut running by the addition of an extra nut socket.

Catalog No. 105, issued by Scully-Jones & Co., 1901 So. Rockwell St., Chicago, Ill., is ready for distribution. It lists their complete line of drilling, tapping, counter-boring, reaming and milling tools as well as a complete line of boiler tools. A graphic index and detailed line drawings giving sectional views and complete engineering data showing sizes and tolerances are also included.

No. 0 Toolmakers' Bench Shear and Rod Cutter

Backed by 20 years of continuous performance test.

The most powerful hand tool on the market.

Regular price ~~\$40.00~~

Stock sale price now \$29.50

Blades are made of high grade tool steel.
Crucible steel carefully tempered bushings for cutting rods.

Equipt with gauge bar with stop for cutting different length rods.

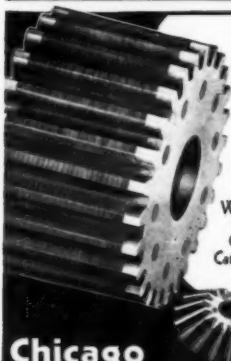
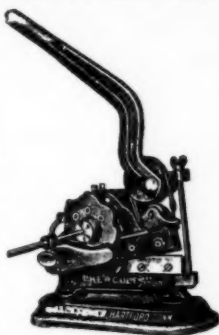
All parts are interchangeable.

Capacity: Cuts iron rods $\frac{1}{4}$ " or under, and sheets and bars $\frac{1}{16}$ ".

MADE IN SIX OTHER SIZES

Write for Catalog and Prices for entire line.

THE MELE COMPANY, East Haven, Conn., U. S. A.



*Write
for
Gear
Catalog*

Cushion Your Drives with Rawhide Gears

A Rawhide Gear or Pinion in any drive will absorb destructive vibration and chatter, will end gear "grinding," will silence grating. It will deliver as much power as an equivalent gear of iron or brass, will take all the wear and still out-wear metal. All sizes, all shapes, all pitches on short notice.

Chicago Rawhide Mfg. Co.

1200 Elston Avenue
Chicago, U. S. A.

Chicago Rawhide GEARS and PINIONS

NEW EQUIPMENT TABLOIDS

The manufacturers will be pleased to send full information upon request

Lukens Steel Co., Coatesville, Pa., have just issued a 24-page Bulletin, wherein they describe their Nickel-Clad Steel, and its adaptation to industry. The numerous illustrations picture many pieces of equipment from a small, plain caustic soda tank, to the largest and most intricate kettles, retorts and containers, adapted to give A-1 service in a wide variety of industries. Those interested may obtain a copy of this instructive Bulletin by addressing Lukens Steel Co.

The Norton Co., Worcester, Mass., announces a new universal tool and cutter grinding machine to be known as the No. 2. Its hydraulic table traverse enables the machine to be used to special advantage in cylindrical and internal grinding and in grinding long reamers and cutters.

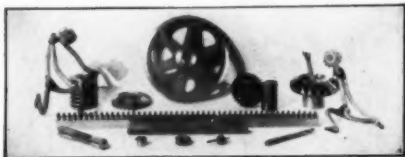
The Cincinnati Milling Machine Co., Cincinnati, Ohio, have developed a new universal milling machine, No. 2, Type L. This machine has been designed for tool room use and job shop production. It has 15 spindle speeds ranging from 23 r.p.m. to 1,200 r.p.m. and 12 feeds from $\frac{3}{4}$ " to 30" per minute.

The Greenard Arbor Press Co., Nashua, N. H., announce their new No. 60 self-contained hydraulic machine with controls for pressures from $\frac{1}{2}$ ton to 15 tons on the down stroke and from $\frac{1}{2}$ ton to 13 tons on the up stroke.

Waterbury Farrel Foundry and Machine Co., Waterbury, Conn., have developed a new power press, tooled to perform five operations successively in quantity production work where the depth of draw does not exceed $\frac{3}{8}$ ".

The Heald Machine Co., Worcester, Mass., announce their new No. 74 internal grinding machine, designed for handling a wide variety of work. Hydraulic table operation provides an unlimited number of table speeds between minimum and maximum. Grinds holes up to 20" in diameter.

SMALL GEARS



ALSO
MEDIUM SIZES IN ALL TYPES
AND MATERIALS

Massachusetts Gear & Tool Co.
36 Nashua St. Woburn Mass.

SUPREME *Super-Duty* SHEAR BLADES

Poorly finished, inaccurate shear blades waste set-up time, cause needless changing and re-grinding and are short lived. For these reasons it will pay you to specify **SUPREME** Shear Blades as *precision* plays an important part in their manufacture.

are made to order to suit your requirements—for any make of Shear. They are manufactured in Laid Alloy and High Speed Steel, as well as Solid Steel.

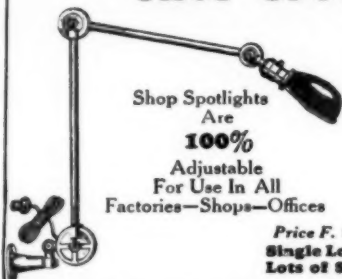
*Let us quote you on
your shear blade
requirements.*

Send Us Your Next Inquiry

The Saw & Knife Specialty Co., Inc.
6526 Carnegie Ave., Cleveland, Ohio

NEW!

SHOP SPOTLIGHT



Shop Spotlights
Are

100%

Adjustable
For Use In All
Factories—Shops—Offices

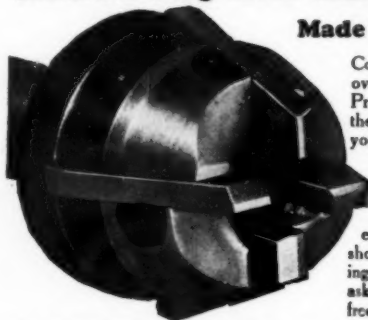
Models for
Wall and Bench
also
Punch Press
and
Drill Press

Price F. O. B. Factory:
Single Lots \$3.25 each
Lots of Six \$1.90 each

CHICAGO DIE CASTING MFG. CO.
2502 W. Monroe St., CHICAGO, ILL.

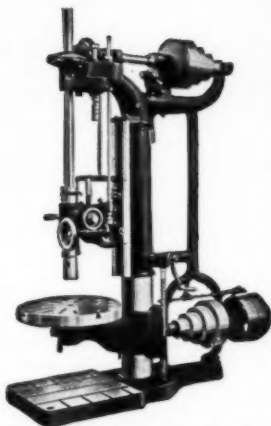
Cut Your Finishing Costs By Using
Genesee Adjustable **Hollow Mills**
Accurate · Long · Lived · Easily Adjusted

Made in 7 Styles



Concerns—the country over—are using **GENESEE** Production Tools to cut their costs. Let us show you how. Send us a sample of your work—or blue prints will do—and we will submit estimates that should show remarkable savings. Mail today—and ask for a copy of our free catalog.

GENESEE MFG. CO. Inc., 141 N. Water St., ROCHESTER, N. Y.



DRILLING MACHINES

SIZES

Stationary Head—14"-18"-21"

Sliding Head—24"-28"-32"-36"

These machines were formerly manufactured by the Rockford Machine Tool Company of Rockford, Illinois. Thousands of these machines have been installed and are giving universal satisfaction.

Also manufacturers of the Cleereman Automatically Oiled, Anti-Friction High Speed Drilling, Boring and Tapping Machines.

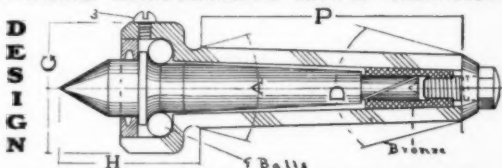
Builders of drilling equipment for over twenty years.

CLEEREMAN MACHINE TOOL COMPANY

Green Bay, Wisconsin

[Formerly Green Bay Barker Machine & Tool Works]

RIGID RESILIENT LIVE CENTER



RIGID TRIPLE-LIFE CENTER

GRINDERS
GREATON



IT OFFERS:

Long Life & Short Overhang

Short Life & Long Overhang

Saves $\frac{1}{3}$ on initial tool; $\frac{2}{3}$ on subsequent inserts.

Rigid Tool Holder Co., 12281 Turner Ave.
Detroit, Michigan

Sheldon Arbor Presses



Sheldon Milling Machine
Vises.

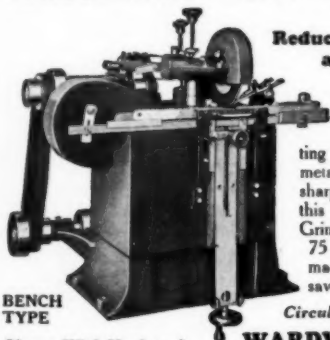
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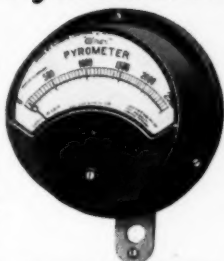
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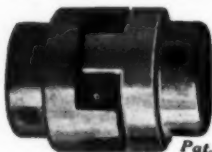
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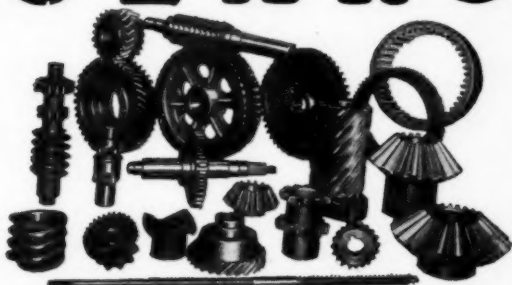
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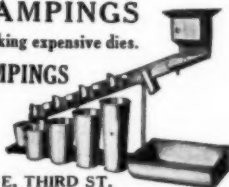
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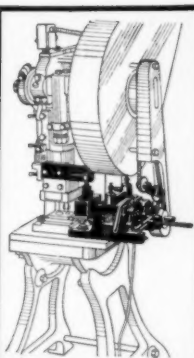
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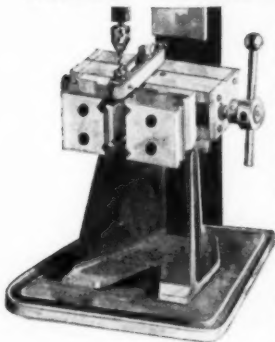


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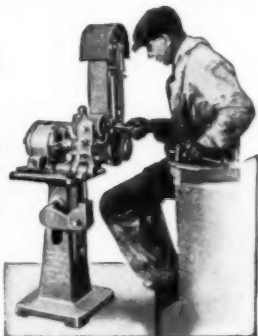
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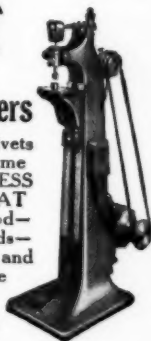


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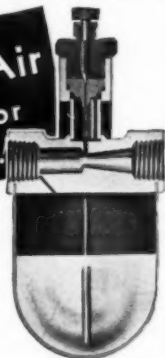
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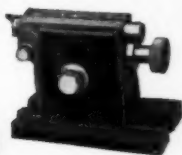
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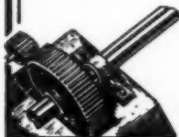
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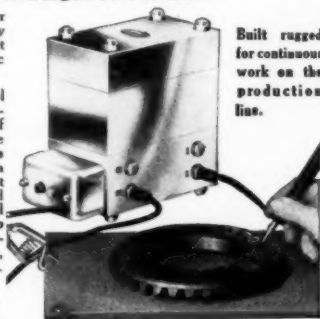
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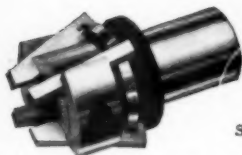


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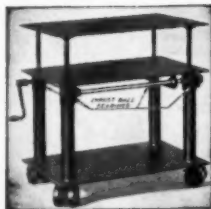
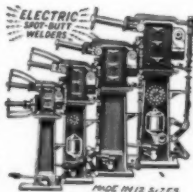
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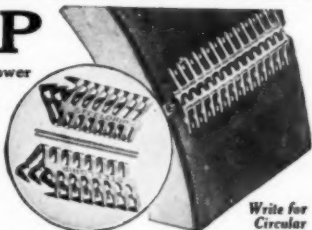
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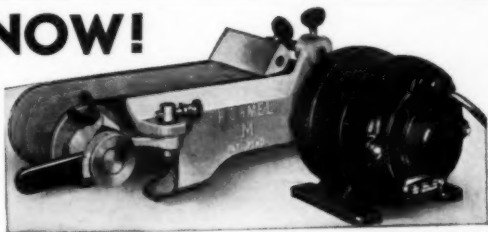
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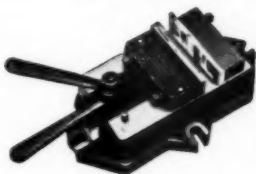
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(See next page)

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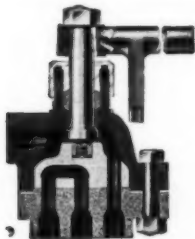
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Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.
Wilson K. R., Buffalo, N. Y.

Balancing Ways

Sundstrand Machine Tool Co., Rockford, Ill.

Band Saw Blades for Metal

Saw and Knife Specialty Co., Cleveland, O.

Band Saw Machines, for Metal

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Grob Brothers, West Allis, Wis.
Tannowitz Works, Grand Rapids, Mich.
Wells Mfg. Co., Three Rivers, Mich.

Band Saw Machines, Wood

Delta Mfg. Co., Milwaukee, Wis.

Bar Cutters

Buffalo Forge Company, Buffalo, N. Y.
Pels & Co., Inc., Henry, 90 West St., New York City

Belt Cutters

Flexible Steel Lacing Co., 4670 Lexington St., Chicago, Ill.

Belt Lacing

Armstrong-Bray & Co., 315 N. Sheldon St., Chicago, Ill.
Flexible Steel Lacing Co., 4670 Lexington St., Chicago, Ill.

Benthes

Angle Steel Steel Co., Plainwell, Mich.

Bench Lathes

Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.

Bench Legs and Drawers

Angle Steel Steel Co., Plainwell, Mich.

Bending Machines, Hand and Power

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Buffalo Forge Company, Buffalo, N. Y.
Lewthwaite Mch. Co., T. H. 311 E. 47th., N. Y.

Bins

Angle Steel Steel Co., Plainwell, Mich.
Stackbin Corp., Providence, R. I.

Blowers

Clements Mfg. Co., 6650 Naragansett, Chicago

Blowers, Portable Electric

Clements Mfg. Co., 6650 Naragansett, Chicago

Bolt and Nut Machinery

Foot-Burt Co., Cleveland, O.

Boring Bars

Chicago Tool & Engr. Co., 8380 So. Chicago Ave., Chicago, Ill.
Maxwell & Co., F. A., Cleveland, Ohio
Multiple Boring Machine Co., St. Louis, Mo.
The Rigid Toolholder Co., Detroit, Mich.
Russell Boring Bar Co., Middletown, Ohio

Boring Heads

Flynn Manufacturing Co., Detroit, Mich.

Boring Machines

Cleereman Mch. Tool Co., Green Bay, Wis.

Broaches, Spline and Square

Taylor Machine Co., Cleveland, Ohio

Brakes, Hand and Power

Pels & Co., Inc., Henry, 90 West St., New York City
Dreis & Krump Mfg. Co., 7440 So. Loomis Blvd., Chicago, Ill.

Brushes, Motor and Generator

Senger Carbon Co., 98 Park Place, New York City

Buffers, Bench

Valley Electric Corp., St. Louis, Mo.

Buffers, Pedestal

Valley Electric Corp., St. Louis, Mo.

Burs, Steel

White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

Bushings, Steel

Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.
Baumbach Mfg. Co., E. A., 1812 So. Kilbourne Ave., Chicago

Bushings, Jig

Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Cabinets

Angle Steel Steel Co., Plainwell, Mich.

Centering Machines

Sundstrand Machine Tool Co., Rockford, Ill.
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Centers, Lathes

Rigid Tool Holder Co., Detroit, Mich.

Chains, Silent and Roller

Chicago Gear Works, 769 W. Jackson Blvd., Chicago
Cullman Wheel Co., 1359 Altgeld St., Chgo.

Chamfering Machines, Automatic

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Chucks

Heuser Mfg. Co., 1633 No. Paulina St., Chicago, Ill.

Chucks, Automatic

Procurier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Collet

Procurier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Drill and Tap

Hartford Special Mch. Co., Hartford, Conn.
Procurier Safety Chuck Co., 14 S. Clinton St., Chicago
Sampson Tool Co., Inc., 101 Walker St., New York, N. Y.

Chucks, Quick Change

Procurier Safety Chuck Co., 14 S. Clinton St., Chicago

Chucks, Ring Wheel Grinder

Graham Manufacturing Co., Providence, R. I.

Cold Saws

Burke Machine Tool Co., Connecticut, Ohio

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Collets for all Lathes and Millers

Hardinge Brothers, Inc., Elmira, N. Y.
Sutton Tool Co., Detroit, Mich.

Collets for Auto. and Hand Screw Machines

Sutton Tool Co., Detroit, Mich.

Collet Tubes

Sutton Tool Co., Detroit, Mich.

Contract Work Wanted

Burke Machine Tool Co., Connecticut, O.

Couplings, Compression Shaft

W. H. Nicholson & Co., Wilkes-Barre, Pa.

Couplings, Flexible

Delta Mfg. Co., Milwaukee, Wis.
Lovejoy Tool Works, 5028 W. Lake St., Chgo.
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Couplings, Shaft

Delta Mfg. Co., Milwaukee, Wis.
W. H. Nicholson & Co., Wilkes-Barre, Pa.

Cut-off Saws

Tannet's Works, Grand Rapids, Mich.

Cutters

Progressive Tool & Cutter Co., Ferndale, Mich.

Cutters, Belt

Flexible Steel Lacing Co., 4670 Lexington St., Chicago, Ill.

Demagnetizers

Luma Electric Equipment Co., Toledo, Ohio

Desks

Angle Steel Stool Co., Plainwell, Mich.

Diamonds, Industrial & Rough

Menden Cutting Factories, Inc., 505 Fifth Ave., New York City

Diamond Pointed Tools

Menden Cutting Factories, Inc., 505 Fifth Ave., New York City

Dies, Blank and Forming

American Tool Works, Inc., Hartford, Conn.
Hamilton Tool Company, Hamilton, Ohio

Die Making Machines

Oliver Instrument Co., Adrian, Mich.

Die Sets

Rammbach Mfg. Co., E. A., 1812 So. Kilbourne Ave., Chicago

Dividing Heads

Wm. Carroll & Son, Norwood, Cincinnati, O.

Dowel Pins, Steel

Ama Industrial Co., 419 N. Carpenter St., Chicago, Ill.
Rammbach Mfg. Co., E. A., 1812 So. Kilbourne Ave., Chicago

Drill Holders

Chicago Tool & Engr. Co., 8280 So. Chicago Ave., Chicago, Ill.

Drills, Electric

SpeedWay Mfg. Co., 1822 So. 52nd Ave., Cicero, Ill.

Drill Jigs, Special

Heuser Mfg. Co., 1638 No. Paulina St., Chicago, Ill.

Drill Jigs, Universal

Heuser Mfg. Co., 1638 No. Paulina St., Chicago, Ill.

Drilling Attachments, High Speed

Graham Manufacturing Co., Providence, R. I.

Drilling Machines, Bench

Atlas Press Co., Kalamazoo, Mich.
Buffalo Forge Company, Buffalo, N. Y.
Cleesman Mch. Tool Co., Green Bay, Wis.

Drilling Machines, Multiple Spindle

Foot-Burt Co., Cleveland, O.

Drilling Machines, Portable Electric

SpeedWay Mfg. Co., 1822 So. 52nd Ave., Cicero, Ill.
Strand Co., N. A., 5001 N. Lincoln St., Chgo
White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

Drilling Machines, Sensitive

Atlas Press Co., Kalamazoo, Mich.
Buffalo Forge Company, Buffalo, N. Y.
Burke Machine Tool Co., Connecticut, Oh
Foot-Burt Co., Cleveland, O.

Drilling Machines, Vertical

Atlas Press Co., Kalamazoo, Mich.
Buffalo Forge Company, Buffalo, N. Y.
Foot-Burt Co., Cleveland, O.

Drives, Lathe

Cullman Wheel Co., 1850 Altgeld St., Chgo.
Hardinge Brothers, Inc., Elmira, N. Y.

Electric Blowers

Clements Mfg. Co., 9450 N. Argonne, Chicago

Electrical Instruments

Illinois Testing Laboratories, Inc., 155 W. Austin Ave., Chicago

Elevating Tables

Hamilton Tool Company, Hamilton, Ohio

Emery Wheel Dressers and Cutters

Western Tool & Mfg. Co., Springfield, O.

Emery Wheel Dressers, Diamond

Menden Cutting Factories, Inc., 505 Fifth Ave., New York City

End Mills

Progressive Tool & Cutter Co., Ferndale, Mich.

Etching Machines, Electric

Luma Electric Equipment Co., Toledo, Ohio

Experimental Work

American Tool Works, Inc., Hartford, Conn.

Fasteners, Belt

Flexible Steel Lacing Co., 4670 Lexington St., Chicago, Ill.

Feeder Tubes

Sutton Tool Co., Detroit, Mich.

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Feed Fingers for Auto. Screw Mchs.

Sutton Tool Co., Detroit, Mich.

Files

Saw & Knife Specialty Co., Cleveland, Ohio

Files, Rotary

White Dental Mfg. Co., 10 E. 40th Street,
New York, N. Y.

Filing Machines

Grob Brothers, West Allis, Wis.
Oliver Instrument Co., Adrian, Mich.

Filing Room Equipment

Wardwell Manufacturing Co., Cleveland, O.

Flexible Shaft Machinery

Pratt & Whitney Co., Hartford, Conn

Furniture, Machine Shop

Western Tool & Mfg. Co., Springfield, O.

Gages, Pin, Plug, Ring and Snap

American Tool Works, Inc., Hartford, Conn.

Gages, Taper

Hartford Special Mch. Co., Hartford, Conn.

Gears

Abart Gear & Machine Co., Cicero, Ill.
Chicago Gear Works, 709 W. Jackson Blvd.,
Chicago
Massachusetts Gear & Tool Co., Woburn,
Mass.
Ohio Gear Co., Cleveland, Ohio
Taylor Machine Co., Cleveland, Ohio

Grinder, Electric

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.

Grinder, Flexible Shaft

Mall Tool Co., 7742 S. Chicago Ave., Chicago
N. A. Strand & Co., 5601 N. Lincoln, Chgo.

Grinder, Hand

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.

Grinder, High Speed

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.
Mall Tool Co., 7742 S. Chicago Ave., Chicago

Grinders, Electric Bench

Delta Mfg. Co., Milwaukee, Wis.
Valley Electric Corp., St. Louis, Mo.

Grinders, Pedestal Electric

Delta Mfg. Co., Milwaukee, Wis.
Valley Electric Corp., St. Louis, Mo.

Grinding Attachments, Drill

Carlson Mfg. Co., C. H., Minneapolis, Minn.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Belt

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Production Machine Co., Greenfield, Mass.
Standard Electrical Tool Co., Cincinnati, O.
Wells Sales Corp., 96 Warren St., New York

Grinding Machines, Cutter, Reamer and Tool

Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, External

Maxwell & Co., F. A., Cleveland, Ohio
Chicago Tool & Engr. Co., 8380 So. Chicago
Ave., Chicago, Ill.

Grinding Machines, Internal

Maxwell & Co., F. A., Cleveland, Ohio
Standard Electrical Tool Co., Cincinnati, O.

Grinding Machines, Portable Electric

Chicago Tool & Engr. Co., 8380 So. Chicago
Ave., Chicago, Ill.
Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.
Mall Tool Co., 7742 S. Chicago Ave., Chicago
Strand Co., N. A., 5601 N. Lincoln St., Chgo
White Dental Mfg. Co., 10 E. 40th Street,
New York, N. Y.

Grinding Machines, Pulley Finishing

Graham Manufacturing Co., Providence, R. I.

Grinding Machines, Ring Wheel

Graham Manufacturing Co., Providence, R. I.

Grinding Machines, Universal

Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Grinding Wheels

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.

Grinding Wheel Dressers, Diamond

Menden Cutting Facilities, Inc., 505 Fifth
Ave., New York City

Grinding Wheels, Mounted

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.

Grinding Wheels On Shanks

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.

Hack Saw Blades

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago

Hack Saw Machines

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago

Hammers, Mallets and Malls

Chicago Rawhide Mfg. Co., 1200 Elston Av.,
Chicago, Ill.

Hand Screw Machines, Precision Bench Type

Hardings Brothers, Inc., Elmira, N. Y.

Heads, Boring

Flynn Manufacturing Co., Detroit, Mich.

Hollow Adjustable Mills

Genesee Mfg. Co., Rochester, N. Y.
Kutmore Tool Co., Rochester, N. Y.

Index Centers

Wm. Carroll & Son, Norwood, Cincinnati, O.

Jigs and Fixtures

American Tool Works, Inc., Hartford, Conn.
Hamilton Tool Company, Hamilton, Ohio
Hartford Special Mch. Co., Hartford, Conn.

Keyway Cutters

Threadwell Tap & Die Co., Greenfield, Mass.

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Knurls and Holders, for Turrets

Graham Manufacturing Co., Providence, R. I.

Lacing, Belt

Flexible Steel Lacing Co., 4670 Lexington St., Chicago, Ill.

Lamp Guards

Flexible Steel Lacing Co., 4670 Lexington St., Chicago, Ill.

Lapping Compound

Timesaver Products Co., 88 So. Desplaines St., Chicago

Lathe Centers

Rigid Tool Holder Co., Detroit, Mich.

Lathe Chip Pans

Angle Steel Stool Co., Plainwell, Mich.

Lathe Drives

Cullman Wheel Co., 1359 Altgeld St., Chgo.
Hardinge Brothers, Inc., Elmira, N. Y.

Lathes, Bench

Atlas Press Co., Kalamazoo, Mich.
Sheldon Machine Co., 2256 Cottage Grove Ave., Chicago, Ill.
South Bend Lathe Works, South Bend, Ind.

Lathes, Back Geared

South Bend Lathe Works, South Bend, Ind.

Lathes, Brake Drum

South Bend Lathe Works, South Bend, Ind.

Lathes, Engine

South Bend Lathe Works, South Bend, Ind.

Lathes, Gap Head

South Bend Lathe Works, South Bend, Ind.

Lathes, Manufacturing

Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Precision Bench

Hardinge Brothers, Inc., Elmira, N. Y.
Wade Tool Co., Waltham, Mass.

Lathes, Precision Bench Screw Cutting

Hardinge Brothers, Inc., Elmira, N. Y.

Lathes, Screw Cutting

South Bend Lathe Works, South Bend, Ind.

Lathes, Wood Turning

Delta Mfg. Co., Milwaukee, Wis.

Layout Fluid

Dayton-Rogers Mfg. Co., Minneapolis, Minn.

Leader Pins, Steel

Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.

Leather Belting, All Types

Chicago Rawhide Mfg. Co., 1200 Elston Ave., Chicago, Ill.

Leather Oil Retainers

Chicago Rawhide Mfg. Co., 1200 Elston Ave., Chicago, Ill.

Leather Pkg., Hydraulic & Pneumatic

Chicago Rawhide Mfg. Co., 1200 Elston Ave., Chicago, Ill.

Lubricator, Automatic

Norgren Co., C. A., Denver, Colo.

Machine Knives

Saw & Knife Specialty Co., Cleveland, Ohio

Machine Shop Lights

Chicago Die Casting Mfg. Co., 2802 West Monroe, Chicago, Ill.

Machine Tender Stands

Angle Steel Stool Co., Plainwell, Mich.

Mandrels, Expanding

W. H. Nicholson & Co., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Micrometers

Bradley Machinery Co., Detroit, Mich.

Milling Attachments

Burke Machine Tool Co., Conneaut, Ohio
Wm. Carroll & Son, Norwood, Cincinnati, O.

Milling Machines, Bench

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Precision Bench

Hardinge Brothers, Inc., Elmira, N. Y.

Milling Machines, Hand

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Plain

Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Mills, Adjustable Hollow

Genesee Mfg. Co., Rochester, N. Y.

Motor Drives, Universal

Cullman Wheel Co., 1359 Altgeld St., Chgo.
Steege Mch. Co., 18 S. Clinton St., Chgo.

Motors, Electric Ball Bearing

Valley Electric Corp., St. Louis, Mo.

Moulds & Ladles, Hammer and Vise

Johnston Tool Co., East Providence, R. I.

Numbering Machines

Numeral Stamp & Tool Co., Staten Island, N. Y.

Packing, Hydraulic

Chicago Rawhide Mfg. Co., 1200 Elston Ave., Chicago, Ill.

Pigeon Hole Sections

Angle Steel Stool Co., Plainwell, Mich.

Classified Finding Index

Pins and Lacing for Belting

Chicago Hawhide Mfg. Co., 1200 Elston Ave., Chicago, Ill.

Pins, Lender And Dowel

Acme Industrial Co., 419 N. Carpenter St., Chicago, Ill.
Baumbach Mfg. Co., E. A., 1812 So. Kishwaukee Ave., Chicago

Pipe Cutters

Ridge Tool Co., Elyria, Ohio

Pipe Vises

Ridge Tool Co., Elyria, Ohio

Pipe Wrenches

Ridge Tool Co., Elyria, Ohio

Planing Machines

Ryerson & Son, Inc., Joseph T., 16th and Rockwell Sts., Chicago

Point Thinning Machines

Oliver Instrument Co., Adrian, Mich.

Press Brakes

Dreis & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.
Pels & Co., Inc., Henry, 90 West St., New York City

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
W. H. Nicholson & Co., Wilkes-Barre, Pa.
Sheldon Machine Co., 2255 Cottage Grove Ave., Chicago, Ill.
Wilson, R. E., Buffalo, N. Y.

Presses, Power

Dreis & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.
Pels & Co., Inc., Henry, 90 West St., New York City

Presses, Punch

Dreis & Krump Mfg. Co., 7440 Loomis Blvd., Chicago, Ill.
Lewthwaite Mch. Co., T. H., 811 E. 47th St., N. Y.
Pels & Co., Inc., Henry, 90 West St., New York City

Production Tools

Genesee Mfg. Co., Rochester, N. Y.

Pullers, Gear and Wheel

Armstrong-Bray & Co., 315 N. Sheldon St., Chicago, Ill.

Punch Press Feeds

Wittek Mfg. Co., 4309 W. 26th Place, Chgo.

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Buffalo Forge Company, Buffalo, N. Y.
Lewthwaite Mch. Co., T. H., 811 E. 47th, New York
Pels & Co., Inc., Henry, 90 West St., New York City
Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies

Lewthwaite Mch. Co., T. H., 811 E. 47th, N. Y.

Pyrometers

Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago
Pyrometer Instrument Co., 102-105 Lafayette St., New York City

Pyrometers, Optical

Pyrometer Instrument Co., 102-105 Lafayette St., New York City

Pyrometers, Portable & Stationary

Illinois Testing Laboratories, Inc., 150 W. Austin Ave., Chicago, Ill.

Pyrometers, Surface

Pyrometer Instrument Co., 102-105 Lafayette St., New York City

Racks, Cut

Massachusetts Gear & Tool Co., Woburn, Mass.

Reamer Holders

W. H. Nicholson & Co., Wilkes-Barre, Pa.

Riveters, Multiple Spindle

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveters, Pneumatic

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rod Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Lewthwaite Mch. Co., T. H., 811 E. 47th, N. Y.
Mele Company, East Haven, Conn.

Saws, Band and Circular for Metal

Saw & Knife Specialty Co., Cleveland, Ohio

Saws, Electric Hand

Delta Mfg. Co., Milwaukee, Wis.

Saw Sharpening Machines

Wardwell Manufacturing Co., Cleveland, O.

Shafts, Flexible

Strand Co., N. A., 5001 N. Lincoln St., Chgo.
White Dental Mfg. Co., 10 E. 40th Street, New York, N. Y.

Shafts, Hangers and Boxes

Delta Mfg. Co., Milwaukee, Wis.

Shafts, Steel

Delta Mfg. Co., Milwaukee, Wis.

Shaping Machines

Osborne & Sexton Machy. Co., Colum

Shear Blades

Saw & Knife Specialty Co., Cleveland, Ohio

Shears, Bench

Mele Company, East Haven, Conn.

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Shears, Hand

Armstrong-Bloom Mfg. Co. 341 N. Francisco
Av., Chicago
Beverly Throatless Shear Co. 3007 W.
110th Place, Chicago, Ill.
Lowthwaite Machine Co., T.H., 311 E. 47th
St., New York
Mele Company, East Haven, Conn.
Pels & Co., Inc., Henry, 90 West St., New
York City
Whitney Metal Tool Co., Rockford, Ill.

Shear, Power

Dreis & Krump Mfg. Co., 7440 Loomis
Bldg., Chicago, Ill.
Pels & Co., Inc., Henry, 90 West St., New
York City

Shears, Slitting

Beverly Throatless Shear Co., 3007 W.
110th Place, Chicago, Ill.
Dreis & Krump Mfg. Co., 7440 Loomis
Bldg., Chicago, Ill.

Shears, Throatless

Beverly Throatless Shear Co. 3007 W.
110th Place, Chicago, Ill.

Shear & Rod Cutter, Bench

Mele Company, East Haven, Conn.

Shop Accessories

Delta Mfg., Co., Milwaukee, Wis.

Shop Spotlights

Chicago Die Casting Mfg. Co., 2500 West
Monroe, Chicago, Ill.

Special Tools and Machinery

American Tool Works, Inc., Hartford, Conn.
Wade Tool Co., Waltham, Mass.

Speed Reducers

Ahart Gear & Machine Co., Cicero, Ill.
Chicago Gear Works, 709 W. Jackson Blvd.,
Chicago
Cullman Wheel Co., 1359 Altgeld St., Chgo.
Ohio Gear Co., Cleveland, Ohio

Spools & Nuts for Auto. Screw Mchs.

Sutton Tool Co., Detroit, Mich.

Spot Welding Machines, Speed.

Risler Engineering Co., Inc., Newark, N. J.
Taylor-Winfield Corp., Warren, Ohio

Sprockets

Chicago Gear Works, 709 W. Jackson Blvd.,
Chicago
Cullman Wheel Co., 1359 Altgeld St., Chgo.
Massachusetts Gear & Tool Co., Woburn,
Mass.
Ohio Gear Co., Cleveland, Ohio

Stampings

Gerding Brothers, Cincinnati, Ohio

Stools and Chairs

Angle Steel Stool Co., Plainwell, Mich.

Straightening Machines

Whitney Metal Tool Co., Rockford, Ill.

Tables

Angle Steel Stool Co., Plainwell, Mich.

Tap Extractors

Walton Co., Hartford, Conn.

Tap Holders

Proconer Safety Chuck Co., 14 S. Clinton
St., Chicago

Tapping Attachments

Proconer Safety Chuck Co., 14 S. Clinton
St., Chicago, Ill.

Tapping Jigs, Universal

Heuser Mfg. Co., 1638 No. Paulina St.,
Chicago, Ill.

Tapping Machines and Attachments

Burke Machine Tool Co., Conneaut, Ohio.
Cleerman Mch. Tool Co., Green Bay, Wis.
Proconer Safety Chuck Co., 14 So. Clinton
St., Chicago, Ill.
Whitney Metal Tool Co., Rockford, Ill.

Thermometers, Resistance Type

Illinois Testing Laboratories, Inc., 150 West
Austin Ave., Chicago, Ill.

Threading Machines, Automatic, Stud

Grant Mfg. & Mch. Co. Bridgeport, Conn.

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Ridge Tool Co., Elyria, Ohio.

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Rigid Toolholder Co., Detroit, Mich.
Western Tool & Mfg. Co., Springfield, O.

Tool Salvage

Renn Tool Co., Detroit, Mich.

Tools, Abrasive

White Dental Mfg. Co., 10 E. 40th Street,
New York, N. Y.

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Lathe and Planer

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tube Flanging Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Trucks

Angle Steel Stool Co., Plainwell, Mich.

Universal Drill Jigs

Heuser Mfg. Co., 1638 No. Paulina St.,
Chicago, Ill.

Universal Joints

American Tool Works, Inc., Hartford, Conn.
Chicago Gear Works, 709 W. Jackson Blvd.,
Chicago

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Used and Rebuilt Machinery

Alamo Engine Co., Hilledale, Mich.
 American Machinery Co., Cleveland, Ohio
 Atlas Equipment Co., 114 S. Clinton, Chgo.
 Belyea Co., Inc., 150 W. 18th St., New York, N. Y.
 Besser Mfg. & Mch. Co., Springfield, Ill.
 Brotherhood & Son, Farcy M., 114 Liberty St., New York, N. Y.
 Brown Machinery Co., St. Louis, Mo.
 Brownell Machinery Co., Providence, R. I.
 Cincinnati Mch. & Supply Co., Cincinnati, O.
 Cincinnati Planer Co., Cincinnati, Ohio
 Clinton Mch. Co., 33 S. Clinton St., Chgo.
 Consolidated Used Machinery Mart, 440 N. Oakley Blvd., Chicago, Ill.
 Craig, Jr., Thomas H. Bridgeport, Conn.
 Davis Machinery Co., Toledo, Ohio
 Denny, W. I., 618 W. Lake St., Chicago
 Detroit Manufacturers Supply Co., Detroit
 Eastern Machinery Co., Cincinnati, O.
 Eisenman, Louis E. & Co., 1761 Elston Ave., Chicago, Ill.
 Easley Machinery Co., E. L., 825 Keen St., Chicago, Ill.
 George, James W., Detroit, Mich.
 Goldman, Harvey H., Detroit, Mich.
 Herben Machinery Equipment Co., 30 S. Clinton St., Chicago, Ill.
 Herberts Mch. Co., Ltd., Los Angeles, Calif.
 Hills, Clark & Co., 645 W. Washington Blvd., Chicago, Ill.
 Howarth Mch. Co., C. C., Detroit, Mich.
 Ideal Machinery Co., Plainfield, Conn.
 Indianapolis Machinery & Supply Company, Indianapolis, Ind.
 International Machinery Co., Detroit, Mich.
 Interstate Mch. Co., 130 S. Clinton, Chgo.
 Iroquois Machinery Co., Buffalo, N. Y.
 Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
 Jones Machine Tool Co., Cincinnati, Ohio
 Kennard-Halkin Mch. Corp., 160 Liberty St., New York, N. Y.
 Kianber Mch. Co., E. L., St. Louis, Mo.
 Long Machinery Corporation, Boston, Mass.
 McDonald Machinery Co., St. Louis
 McGill Machine Co., Binghamton, N. Y.
 Marr-Galbreath Mch. Co., Pittsburgh, Pa.
 Midwest Equipment Co., 625 W. Lake St., Chicago, Ill.
 Miles Machinery Co., Saginaw, W. S., Mich.
 Mottler Machinery Co., Chas. L., 120-124 S. Clinton St., Chicago
 Morey & Co., 45 Mill St., Astoria, Long Island, N. Y.
 Morris Machinery Co., Newark, N. J.
 Noble Machinery Co., 217 Centre St., New York, N. Y.
 Norton-Broadway Machinery Co., Cincinnati, Ohio
 O'Brien Machinery Co., Philadelphia
 Ohio Gear Co., The, Cleveland, O.
 Ohio Mch. & Supply Co., Cincinnati, Ohio
 Ott Machinery Sales Co., Detroit, Mich.
 Osborne & Sexton Mch. Co., Columbus, O.
 Pattison Supply Co., W. M., Cleveland, O.
 Revere Fritz Co., 28 N. Clinton St., Chicago
 Reliance Machinery Sales Co., Pittsburgh, Pa.
 Reynolds & Son, Geo. T., Providence, R. I.
 Rittterbush & Co., Inc., 30 Church Street, New York City
 Riverside Machinery Depot, Detroit, Mich.
 Rosenkrans & Weisbecker, 2309 A. Singer Bldg., New York City
 Russell Machine Co., Pittsburgh, Pa.
 Scott-Bansbach Mch. Co., 4607 W. 20th St., Chicago
 Scully Jones & Co., 1901 S. Beckwell St., Chicago, Ill.
 Segal Machinery Co., 809 W. Lake St., Chicago, Ill.
 Simmons Machine Tool Corp., Albany, N. Y.
 Stecke Mch. Co., 18 S. Clinton St., Chgo.
 Stockman, John A., Honesdale, Pa.
 Strong, Charles & Hammond Co., Cleveland
 Sun Machinery Co., 29 Van Nuren Street, Newark, N. J.
 Surplus Stock & Mch. Co., 1123 W. Lake St., Chicago
 Surplus Material & Mch. Co., Detroit, Mich.

Used and Rebuilt Machinery—Cont.

Thompson, H. A., Fort Wayne, Ind.
 United Mch. & Supply Co., St. Louis, Mo.
 Victor Machinery Co., 128 S. Clinton Street, Chicago, Ill.
 Victor Machinery Exchange, 251 Center St., New York City
 Waters Mch. Co., C. H., Elkhart, Ind.
 Weber, H. J., Riverside, Ill.
 West Penn Machinery Co., Pittsburgh, Pa.
 White Mch. Co., A. D., 108 N. Jefferson St., Chicago
 Wiener Mch. Co., Inc., 237 Centre St., New York City
 Wigginworth Mch. Co., Cambridge, Mass.
 Wolnick Machinery Sales, 21st & Marshall Blvd., Chicago, Ill.
Valves, Foot, Lever & Solenoid
 Nicholson & Co., W. H., Wilkes-Barre, Pa.

Vices, Drilling Machine

Armstrong Blum Mfg. Co., 341 N. Francisco Ave., Chicago
 Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago
 Graham Manufacturing Co., Providence, R. I.
 Heuser Mfg. Co., 1638 No. Paulina St., Chicago, Ill.
 L-W Chuck Co., Toledo, Ohio
 Martin Tool & Dr. Works, J. E., Springfield, O.
 Sampson Tool Co., Inc., 101 Walker St., New York, N. Y.
 Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.

Vices, Drill

Johnson Tool Co., East Providence, R. I.

Vices, Machinists'

Chicago Tool & Engr. Co., 8380 So. Chicago Ave., Chicago, Ill.
 L-W Chuck Co., Toledo, Ohio
 Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.
 Western Tool & Mfg. Co., Springfield, O.

Vices, Milling Machine

Graham Manufacturing Co., Providence, R. I.
 Hartford Special Mch. Co., Hartford, Conn.
 L-W Chuck Co., Toledo, Ohio
 Sheldon Machine Co., 3255 Cottage Grove Ave., Chicago, Ill.

Vices, Shaper

Graham Manufacturing Co., Providence, R. I.
 L-W Chuck Co., Toledo, Ohio

Waste Cans

Angie Steel Stool Co., Plainfield, Mich.

Welding Machines, Electric Spot

Eisler Engineering Co., Inc., Newark, N. J.

Welding Machines, Resistance

Eisler Engineering Co., Inc., Newark, N. J.

Wheel Dressing Diamonds

Menden Cutting Factories, Inc., 505 Fifth Ave., New York City

Wheel Pullers

Armstrong-Gray & Co., 315 N. Sheldon St., Chicago, Ill.

Wheels, Grinding

Chicago Wheel & Mfg. Co., M. C. Tool Div., 116 S. Aberdeen St., Chicago, Ill.

Woodworking Machinery

Tannewitz Works, Grand Rapids, Mich.

Wrenches, Ratchet

Lowell Wrench Co., Worcester, Mass.

Wrenches, Socket

Lowell Wrench Co., Worcester, Mass.

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Used and Rebuilt Machinery Section

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Brake, box and pan, D. & K. 5'.
Hammers, 25 & 50 lbs. Baudry.
Jolt rollover, Osborn.
Miller, No. 28 Ohio plain.
Nibblers, Campbell Nos. 1 & 1A, m.d.

Rolls, Ryerson 6'x6" pyramid.
Rolls, Pyramid, 8 1/2'x1 1/2' cap.
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Shear, Quickwork, 16 ga., x3' th.
Shear, 10'x18 ga. cap. power.

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Phone Lawndale 1777,

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Lathe, 16x6 Hendey, quick change gear,
50" Niles, vertical Boring Mill, two heads on cross rail.

Lathe, 26x14 Bridgeport, tap. att.
Miller, No. 1 1/2 Cincinnati, plain.
Screw mche., No. 4 W. & S., g. f. h.
Shaper, 24" Milwaukee, b.g., sw. v.
Shear, 26"x26"x8' Whitcomb, 2 hds.
Screw machine, No. 6 B. & S. w. f.
Tapper, Baker Bros.

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

Dicing mche., 50-ton Henry & W.
Grinder, No. 2 1/2 Bath universal.
Grinder, 20"x120" Norton plain.
Lathe, 60"x30" Pond.
Lathe, 16"x8" Prentice g. h.
Miller, No. 4 Cincinnati vertical.

Miller, No. 3 B. & S. plain.
Miller, No. 3 Becker vert. rotary.
Planer, 24"x24"x6' Whitcomb.
Planer, 26"x26"x8' Whitcomb, 2 hds.
Screw machine, No. 6 B. & S. w. f.
Tapper, Baker Bros.

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street,

Cambridge, Mass.

Brake, 10' 6"-3/16" ga. Geo. Ohl.
Boring mill, 24" Bullard, New Era.
Boring mill, 42" Bullard New Era.
Boring mill, Cleveland 2 1/2" bar.
Grinder, No. 2 Cincinnati, centerless.
Hammer, No. 6B Nazel.

Lathe, 36"x20' American grd. hd.
Miller, No. 2-B Brown & Sharpe.
Miller, 5B heavy B. & S., rap. trav.
Nibbler, Gray 3/16"-3/4" throat.
Planer, 42"x42"x22" Pond 4 h., rev. md.
Shear, 10', 10 ga. Niagara, 15" gap.

Send for Complete Stock List.

USED AND REBUILT MACHINERY

FOR SALE BY

John A. Stockman,	- - - -	Honesdale, Pa.
Bolt threader, 2" Landis, double spindle.....		\$ 475.
Drill, radial, 4" Cincinnati-Bickford.....		650.
Lathe, 16"x8" Sidney, geared head, motor-in-base.....		750.
Lathe, 36"x8" Bridgeford, geared hd., 15 h. p., 3-60-220 v. motor on hd.....		1250.
Miller, No. 1 1/2 Brown & Sharpe universal, back geared.....		300.
Miller, No. 1 Cleveland universal.....		750.
Pipe machine, 1 1/2 to 8" E. C. & V.....		450.
Semi-auto hand screw machine, No. 2 B. & S.		175.
Car wheel press, 300 ton Hydro-Press Co., 7 1/2 a. c. motor drive.....		750.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Air compressor, Daco No. 605 P complete, motor and tank.....	\$ 85.
Air compressor, Curtis model A, 4 1/2 x 4 1/2, 8 to 16 cu. ft.....	50.
Air comp., Curtis, Model A, vertical, duplex, 8" x 8", cap. 80-110 cu. ft.....	250.
Automatic screw machines, B. & S., No. 00, 0, 2 and 2G.....	\$250. to 600.
Collets, tools & attachments for Brown & Sharpe automatics.....	Write
Automatic screw machine, Davenport, 5 spindle 1/2" capacity.....	500.
Automatic screw machine, Gridley 4 spdl. "F", 1/2", 1 1/2", 1 3/4" and 2 1/4" \$150 to	750.
Automatic screw machine, Gridley, 4 1/2" single spindle.....	400.
Automatic screw machine, Cleveland, 1 1/2" Model A, square pan.....	250.
Bolt cutter, 1" Acme, belt drive.....	175.
Drill, New Albany, h. s., motor drive, 110-60-1.....	100.
Drill, Demco h. s., b. b., 1/2" capacity.....	110.
Drill, Demco h. s., b. b., 3/4" capacity.....	135.
Drill, Leland Gifford, h. s., b. b., 14" swing, No. 2 M. T.....	150.
Drill, 2 spindle Leland-Gifford h. s., b. b., 14", No. 2 M. T.....	250.
Drill, 2 spindle H. & W. h. s., b. b., 16" swing, heavy duty, class B....	175.
Drill, 3 spindle Avey, h. s., b. b. bench type on pedestal, 1/2" cap.....	200.
Drill, 3 spdl., Leland-G., 20" swing, h. s., b. b., 12" travel, 26"x54" table	500.
Drill, 4 spindle Leland Gifford h. s., b. b., 14" swing, No. 2 M. T.....	400.
Drill, 4 spindle Demco, h. s., b. b., 16" swing, 1/2" capacity.....	400.
Drill, 20" Canedy-Otto, back geared, power feed.....	100.
Drill, 25" Barnes, stationary head, back geared, power feed.....	135.
Drill, 24" Sibley sliding head, b. g. and p. f., No. 4 M. T.....	150.
Drill, radial, C. O., No. 50, wall post type, 2 1/2 foot arm, hand feed.....	125.
Gang shifter, 30" Elgin, 26 gauge, with fingers and cutters.....	125.
Gear cutter, B. & S. No. 3, 26" for spur gears.....	200.
Gear hobber, No. 00 Pfauter, cap. 8" x 6" x 10 DP.....	100.
Grinder, 6" x 32" Norton plain cylindrical, arranged motor drive.....	300.
Grinder, safety, surface, capacity 16" wide, 50" long, 12" high, belt dr.	500.
Grinder, Gardner No. 4 disc, 23" dia. with press and tables, ball brg....	200.
Grinder, Ransom disc, 26" diameter with press and tables.....	150.
Grinder, Heald, No. 65, cylinder, 16" spindle and fixture.....	350.
Hammer, No. 1 1/2 B. High Speed belt drive, 1/2" capacity.....	60.
Hammer, No. 3 A High Speed belt drive, heavy duty, 3/16" cap.....	150.
Hammer, No. 3 A, H. D., motor dr. with motor, 220, 60, 3. 5/16" cap.	200.
Hammer, No. 4 A. High Speed belt drive, 1/2" cap.....	200.
Hammer, No. 5 A High Speed, motor shelf, 1/2" capacity.....	275.
Hammer, 300 lb. board drop.....	250.
Hammer, Bradley, 30 lb. compact belt drive.....	200.
Lathe 14" x 5" Gold Seal, Sebastian all geared head, plain change.....	250.
Lathe, 16" x 24" x 6" So. Bend, gap, plain change, drawn in and chuck...	350.
Lathe, 16" x 6" American, quick change, pan bed and chuck.....	400.
Lathe, 16x8 Hendey, g. c., taper attachment and chuck, rebuilt.....	600.
Lathe, 18" x 8" Davis, d. b. g., q. c., heavy duty.....	450.
Lathe, 18" x 8" Hamilton, semi q. c. actual swing 20 1/2".....	175.
Lathe, 20" x 8" Prentice, plain change with 2 chucks.....	150.
Lathe, 24" x 13" Dietz, Schumacher & Boye, plain change, with chuck...	300.
Lathe, 30" x 13" H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs.....	800.
Lathe, sliding gap, 28-48" x 12" Harrington plain change.....	400.

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1210 House Building,

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Air compressors, 30 to 2500 cu. ft.
Automatic, New Britain 6 spdl, 1x5".
Baling press, No. 12-P Logemann.
Bor. mills, 24" & 42" Bullard New Era.
Bor. mill, 36" Bullard, side hd. s.p.d.
Boring mill, 42" 2 heads Bullard.
Boring mill, 45" Gisholt r.p.t., 2 hds.
Boring mill, 72" Niles, 2 heads, m.d.
Bor. mill, 76" Bullard, 2 hds., b. d.
Boring mill, horiz. 64" Niles, fl. type.
Brake, 7' x10 ga. Chicago, m. d.
Brakes, 3' & 10' x3/16" Chicago, m. d.
Buff. & pol. O. B. Bridge., 40" C-c.
Bulldozers, Nos. 2, 4, 6, 9, 28, & 30.
Cranes, Electric Traveling.
Crane, crawler, gas., No. 2 Nor'wea.
Drill, radial, 4' Prentice, t. a., b. d.
Drills, rad. 3, 4, 5 & 6' Cin.-Bick. m.d.
Drills, radial 4' & 6' Dreses, m. d.
Drill, radial, 6' Fosdick, s. p. d.
Drill, Baker, table 23 1/2' x17', s. p. d.
Drills, upright 10" to 36".
Flanger, McCabe, 1" capacity, dies.
Forging mch. 1 1/2" Acme, st. fr. b. d.
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Gear cutter, spur, D.-S. cap. 2 1/2" x3 1/2".
Gear cutter, spur, 36" x10" Newark.
Grinder, crank, No. 4A Landis spec.
Grinder, die, No. 101 Bridg., m. d.
Grinder, disc, No. 8-20" Besly, b. d.
Grinder, disc, No. 6-18-1 Besly, m. d.
Grinder, knife, 216" Bridge., 26" wheel.
Grinder, knife, 60" Bridgeport, m. d.
Grinder, pl. 28" x120" Landis hyd. gap.
Grinder, surf. 42" Spring, tbl. 18x84".
Grinder, sur. 14" Pratt & W., m. d.
Grinder, surf. Diamond, table 48"x16".
Hammer, Blacker, power, 35-lbs.
Hammer, pwr., 100 lb. Brad. cush.
Hammers, Nos. 2B-, 3-B, 4B. Nazel.
Hammers, steam, 600 lb. to 6000 lbs.
Hammers, stm. dr. 1500 to 10000 lb.
Lathe, 16"x6" LeBlond, q.c.g., d.b.g.
Lathe, 18"x8" Lodge & S. grd. hd.
Lathe, 24"x12" American, q.c.g., b.d.
Lathe, 24"x14" LeBl., g.h., q.c.g. m.d.
Lathe, 24"x16" Bridgeford, g.h.d. m.d.
Lathe, 30"x18" LeBl., g.h., q.c.g. m.d.
Lathe, 48"x30" Pitts'h p. c. g., b. d.
Lathe, turret, No. 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, 6 1/2" hole.
Lathe, turret, 34" Gisholt, b. d.
Lysholm tables, 72" x30".
Miller, hand, No. 2 Pratt & W.
Miller, pl. No. 2 Kemp-Smith, b. d.
Miller, plain, Nos. 3 & 5 Cincinnati.
Miller, pl., No. 5B Hyv. B. & S., s.p.d.
Miller, rotary, 40" Ohio tilted, m. d.
Miller, slab, 36"x36"x10" Ing. adj. r.
Motors, a. c. & d. c.
Nut mche., Wat-Far. 3" cold. b. d.
Pickler, 4 arm Mesta, 10' radius.

Pipe machines, 8" Oster.
Pipe mches., 6", 8" & 12" Williams.
Planer, 36"x36"x8' Gray 3 hds. m. d.
Pl., 56"x48"x12" Det. & H. rev. m.d.
Planer, rotary, 40" Cleveland, m. d.
Press, No. 3 Bliss, Stiles type.
Press, cam, No. 69N Bliss, dbl act. inc.
Press, o. b. i. Bliss, Nos. 18, 19, 20.
Presses, o. b. i. Nos. 4 & 5 Niagara.
Press, No. 55 Tol. s. s. st. bed 2" x20x19.
Presses, Nos. 57, 57 1/2, 58 1/2 Toledo grd.
Presses, trimming, United, m. d.
Press, No. 64 Cons., 17"x17", str. 4 1/2".
Press, No. 37 Toledo, 32"x32", str. 6".
Presses, hyd. 200-ton Oilgear.
Press, No. 96-A Toledo, d. c. 5" str.
Press dbl. crk., No. 5 Bliss, 2" str.
Press, No. 6 Bliss dbl. crank, 6" str.
Press, screw, No. 87 Niagara.
Press, cam, No. 3 1/2 Bliss, b. d.
Press, wheel, 300-ton, motor drive.
Profiler, 2-spdl., No. 14 Pratt & W.
Punch & s., No. 6 L. & A. 4" thru 1/2".
Punch & s., "C" Clev. 13 1/2" 1/4" m. d.
Punch, mult., No. 5 H. & J. 10".
Riveters, air, hammer, spinning.
Rolls, bend 50"x3/16" Bertsch, int. t.
Rolls, bending, 12"x4" H. & J. b. d.
Roller, thread, Nos. 10, 30, 40 W.-F.
Saw, No. 21 Higley, cold, 10" rd. m. d.
Saw, cold, No. 6 Coch.-Bly, s. p. d.
Saw, cold, 48" Newton, m. d.
Saw, fric., Model I-A Hunter, m. d.
Saws, friction, Nos. 2, 3 & 4 Ryerson.
Scale, sheet bundling, 2500 lbs.
Screw mchs. Nos. 52, 53, 55 Nat. A.
Screw mche. auto., No. 6B. & S. s.p. d.
Shaper, vert., Jones 10" stroke, m. d.
Shapers, 16", 20", 24" & 36" G. & E.
Shaper, 24" Flather and P. & J.
Shear, circle No. 3 Bliss, 40"x20 ga.
Shear, circle No. 15A Nia. 48"x16 ga.
Shear, cir., 1" Newbold, die 14", m. d.
Shear, o. e. 27" United, 8"x24" m. d.
Shears, alligator, 1 1/2", 2", 3" & 4".
Shear, allig. No. 6 Mesta. 6" sq. m. d.
Shear, angle, 6"x6"x1" H. & J.
Shear, bevel, Lennox 1/2", b. d.
Shear, BLUEFG-20 Pels, 1-3/16"-1/4".
Shear, sq. No. 196-F Nia. 8"x18 ga.
Shear, guil. No. 5 H. & J. 4" sq., m. d.
Shear, square 8"x14 ga. Ohl. b. d.
Shear, sq., 12"x14 ga. Peerless, b. d.
Shear, sq. 16"x4" Niagara, m. d.
Slotter, 6" Newton, 8" & 21" Betts.
Slotter, 72" Morton, m. d.
Straitener, angle, Newbold, 4"x4"x8".
Straightener, 1 1/2", 4" rd. Abramson.
Straitner, No. 2 K. & R., 7-r., cap. 1 1/2".
Table, rotary, 24"; graduated 360 deg.
Tapping machine, vertical 4" Baker.
Testing mch., Brinnell hard, type A.
Upsetters, 1" to 6".

USED AND REBUILT MACHINERY

FOR SALE BY

Herben Machinery & Equipment Co., 30 S. Clinton St., Chicago, Ill.

Air compressor, 10x10 horizontal.
 Bor. mil, vert. 54" Niles, 2 hds. \$375.
 Brakes, apr., 8', 10', 12, 14, 16, 18 ga.
 Brakes, press, 10' 10 ga., 10' 4".
 Drills, 14, 16, 26, 36", 1, 2, 3, 4-spdl.,
 Hammers, pwr. Little Giant, 100 lb.
 and 250 lb.
 Lathes, large stock, all sizes.
 Miller, univ., s 1 Cinc. \$100; s 2, \$350.
 Presses, Nos. 2, 3, 5: hyd. 100 ton.
 Presses, all sizes.
 Punch & shear. Badger, \$125.

Rolls, 3, 6, 8' and 10'.
 Saws, 1, 2, 5 Marvel h. s.; 6x6, 9x9.
 Screw machines, No. 00 B. & S. auto.
 Screw machines, Nos. 1, 2 3 Foster.
 Shaper. 20" Walcott, \$85.
 Shapers, 7", 16", 20", 24"
 Shears, pwr. sq., 10' 4"; 10' 14ga. 36" 16g.
 Stackers & portable elevator, Economy, \$110.
 Welders, spot, 5 and 10 k. w.
 Welders, arc, 200 and 300 amp.

FOR SALE BY

Bennett Machinery Co.,

Automatics, No. 23 New Brit. chuck.
 No. 34 New Britain chucking.
 No. 55 and No. 53 National Acme.
 Boring mill, 48" Colburn.
 Bolt cutter, 2" Acme double head.
 Sensitive drills, 3, 4 and 6 spindles,
 Allen, 7" and 12" overhand.
 4 spindle Barnes, 22", heavy duty.
 12 spdl. Pratt & Whitney No. 12.
 Radial drills, 5' Cinci.-Bick., s. p. d.
 4' Cinci.-Bickford motor on arm.
 4' American, s. p. d.
 3 1/2' and 3' Cinci.-Bickford s. p. d.
 2 1/2' Fosdick, s. p. d.
 Gear cutter, 60" Brown & S. spur.
 36" Fellows No. 6, gear shaper.
 6" Gleason Straight Bevel Gear
 Generator.
 Grinders, No. 348 Covell-Hanchett
 48" face.
 No. 11 B. & S. 6x32, self. cont.
 10"x96" Norton plain.
 No. 55 Heald Cylinder.
 No. 2 Oakley univ. tool & cutter.
 No. 2 Norton univ. tool & cutter.
 No. 2 Ohio univ. tool & cut. m. d.
 Hammer, 300 lb. Beaudry, m. d.
 Keyseater, No. 3 Mitts & Merrill.
 Lathes, 12"x6" Seneca Falls, q. c. g., co.
 14"x6" Monarch q. c. g., cone.
 14/24"x7" Barnes sliding bed gap.
 16"x6" American geared hd., m. d.
 16"x8" Pratt & Whitney, cone t. a.
 18"x8" Lodge & S., q. c. g., cone.
 19"x10" LeBlond t. a., cone.
 20"x8" Lodge & S., q. c. g., cone.
 20"x8" Hendey t. a., cone.
 24"x10" American grd. hd., m. d.
 24"x12" Putnam, q. c. g., cone.
 26"x14" Pond, q. c. g., t. a., cone.
 32"x22" Bridgeford grd. hd., s. p. d.
 36"x19" N. B. P. grd. hd., m. d.
 36"x32" LeBlond, q. c. g., 2 car.

30 Church St., New York, N. Y.

26/48"x18" McCabe double spin.
 Lathes, turret, No. 4 W. & L. (3),
 18" Libby t. a.
 21" & 24" Steinle, m. d. (3).
 Millers, univ., No. 1 B. & S. cone.
 No. 2 Cincinnati, cone.
 No. 2A Hendey, m. d.
 No. 3 LeBlond, cone.
 Millers, plain, No. 1B B. & S., s. p. d.
 No. 2 Kempsmith, s. p. d.
 No. 2B heavy, B. & S., s. p. d.
 No. 3B B. & S., s. p. d.
 No. 4G LeBlond, s. p. d.
 No. 5 Cincinnati, s. p. d.
 Millers, vert. No. 4B & No. 3 Becker
 No. 14 Garvin, table 20x48.
 No. 33 Kempsmith prod. 50" feed.
 Pipe mche., 2" Bignall & K., m. d.
 6" Williams Rapiduction, m. d.
 8", 12", 18" Saunders.
 Presses, No. 5 Bliss "Stiles".
 No. 1245 Maxams o. b. i. double
 action cam draw.
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3-120	G. E.	300/750
1-100	West.	365/600
3-80	Diehl	500/1100
1-60	G. E.	400/1050
2-50	West.	225/600
1-40	West.	300/900
1-35	West.	500/1500
1-35	Cr. Wh.	800/1600
1-25	West.	400/1200
3-25	West.	650/2200
1-20	West.	650/1300
2-20	West.	375/1500
20-20	G. E.	650/1950
1-20	West.	500/1500
1-20	G. E.	500/1500
2-15	El. Dy.	300/900
1-15	West.	600/1200
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1-260	Al. Ch.	2200/440	720
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1-450/360	West.	2200	675/700
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1-400	West.	550	505
1-300	G. E.	550	575
1-250	F. Morse	2200	1200
1-250	West.	2300/440	700
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1-200	G. E.	220/440	900
1-150	G. E.	440	1750

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No. 3 W. & S. Fox turret lathe.
No. 1B, Foster turret lathe with auto. chuck and bar feed.

No. 6 Brown & Sharpe screw mche.
19" Foster, geared friction head, 24" capacity.
19" Foster, grd. fr. hd. turret lathe, power cross feed, 24" hole.
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Gear hobber, No. 3 Barber-C. (2).	Mill, No. 1 B. & S. vertical, c. p.
Grinder, No. 3 Wilmarth & M. surf.	Nibbler, No. 1 Campbell, 6" throat.
Grinder, No. 14 P. & W. vert. surf. b.b.	Press, No. 2½ Consolidated, o. b. i.
Keyseater, No. 2 Davis.	Saw, No. 2 Klemm metal cutting.
Lathe, 16"x8" Springfield, q.c.g., t. & c.	Screw machines, Nos. 4 & 6 Warner & Swasey.
Lathe, 18"x8" LeBlond h. d., q. c. g.	Shaper, 20", 24" Steptoe crank, b. g.
Lathe, 18"x10" Amer. q. c. g., comp.	Shaper, 15" Potter & Johnston, univ.
Lathe, 28"x18" Pittsburgh q.c.g., t.a.	Tappers, No. 2 & 2X Garvin, vert.
Mill, No. 2 Kempsmith, plain.	Threader, 1" Landis bolt, Landis hd.
Mill, No. 2 Cin. hi power pl., s. p. d.	

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Column facer, 14" Espen-Lucas.	Lathe, 66"x38" Bement, motor drive.
Grinder, No. 55 Heald.	Miller, No. 3 K. & T., univ. table
Grinder, No. 2 Van Norman Piston.	55"x15", range 34"x12"x19"
Grinder, 10"x52" Landis, self contained, plain.	Miller, No. 4 Cincinnati universal,
Hammer, 800 lb. Erie, steam forging.	belt driven, table 57"x14"
Hammer, 1100 lb. NBP. steam forg.	Miller, No. 4 Cincinnati vertical,
Hammer, 2900 lb. Chambersburg	single pulley drive.
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Lathes, 18"x8" Bradford, mtr. dr.	Punch, No. 3 Southwark 4x4", mtr.
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Drill & tap., No. 314 Baker, cap. 3".	Press, No. 3 Bliss dbl. cr. grd. 36" bet. uprights, 4" shaft.
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Lathe, 48"x20" Betts-B., a. c., m. d.	Punch, L&A 1" thru 1", 24" tht.
Miller, No. 2½ Rockford, cone.	Saw, 6" Peerless univ. shaping.
Miller, No. 2AS Milwaukee, double over arm, single pulley.	Shaper, 36" G. & E., b. g. crank.
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No. 3 Cincinnati plain, s. p. d.

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No. 2 Diamond surface, m. d.
84" Diamond face m. d.

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No. 70 Heald internal.

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No. 3A Warner & Swasey.

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- 16"x6" Hendey, (2).
- 18"x10" American, gd. hd., motor dr.
- 16"x8" American.
- 18"x8" American, (3).
- 32"x23" Bridgeford, grd. hd., s. p. d.
- 36"x26" Bridgeford gd. hd., motor dr.
- 24—48x14" McCabe gap gd. hd., m.
- 24—48x18" McCabe gap, belt drive.
- 33"x12" L. & S. heavy q. c. g., belt.
- 36"x22" New Haven late q. c. g., belt.

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- No. 65 Heald cylinder, Like new.
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- No. 3 Abrasive Surface, m. d.
- No. 19, 53 Bealy vertical disc, belt.

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- No. 50 Perkins o. b. i., flywheel, (4).
- No. 79-B Stoll, geared.
- No. 77 Bliss-Consolidated, geared.
- No. 203D Toledo, st. s., d. c., flywheel.
- No. 74 Bliss-Cons. gap frame flywheel.
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- 103"x20" G. & E. Gear Cutter.
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66"x21", 36' Putnam t.g., m. d.

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18" & 24" Cincinnati automatic.

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36"x36"x24' & 48"x48"x10' Gray.

56"x56"x32" Cincinnati.

72"x72"x12" Cincinnati.

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H. & W. 50-ton dieing machine.

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- 2—No. 3 Cincinnati univ. cone type.
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- 4" Newton double end spline.
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- 16"x8" Monarch quick change.

- 16"x8" American quick change.
- 14"x6" Hendey taper attachment.
- 3—12"x5" Hendey quick change.
- 10 Coulter automatic threading.

GRINDERS

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- 10x36 Landis plain self contained.
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- 2—No. 65 Heald internal.
- 2—No. 70 Heald internal.
- No. 2 Sellers universal tool.
- 2—No. 3 Wilmarth & Morman sur.
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1, 4, 6 spinde No. 3 Avey, h. s., b. b.
2 sp. Leland & Gifford, direct m. d.
3 spindle No. 2 Demco B. B.
6 spindle 21" Hoefler Gang Drill.
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No. 1, 1½ Pratt & W. 2 spindle Gun.
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4 spindle Foote-Burt Heavy Duty.
4 spindle 22" Barnes Camel Back.
No. 26C Fox Multiple Spindle.

No. 216, 220 Baker 2 spindle.
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3½" Cin. Bickford Plain Radial.
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4", 6", 3½" American Triple Purpose
Plain Radial Drills, gear box.
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Bickford Upright.
D2, D3, D4 Colburn H. D.
No. 2, 4, 22 Colburn Mfg.
No. 121, 217, 310, 314, 315 Baker HD
20, 22, 24, 32, 40" Aurora Upright.

MILLING MACHINES

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No. 3, 4 Cincinnati Universal, s. p. d.
No. 1½, 2, 3 Brown & S. Univ., cone.
No. 2A, 2A Heavy B. & S. Univ. m. d.
No. 3 Kempamith Universal, cone.
No. 2, 3, 4 Cincinnati Vertical, s. p. d.
No. 2M Cincinnati Vert., motor in
base, Timken Bearings, latest.
No. 3A B. & S. Univ., motor in base.
No. 4 Kempamith Vert. Maxi-Miller.
No. 3 Rockford Rigidmill, m. d.
No. 21 Brown & S. Auto., s. p. d.
No. 33 Kempamith Production.
48" Cincinnati Plain Auto., worm dr.

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24" Cincinnati Pl. Automatic, National
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No. 3B, 4B Heavy, 5B Heavy Brown
& Sharpe Plain, m. d. taper spindle.
No. 2B, 3B Mil. Pl., dbl overarm.
No. 1, 3 Kempamith Plain, cone.
No. 1½, 2, 3, 4 Cincinnati pl., cone.
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14"x8" Reed-Prentice.
16"x6" Lodge & S. Selective, taper.
18"x6" American, 12 speed, auto oiled.
18"x8" American, 12 speed, auto oiled.
18"x8" Lodge & S. Selec., 12 speed.
20"x8" American, 8 speed.
20"x10" American, 8 speed.
20"x6" Hendey.

24"x8" American, Medium Pattern.
12 speed, taper.
24"x10" American, Medium Pattern,
12 speed, taper.
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32" raised to 41"x28" Bridgeford, taper

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16"x6" Hendey, yoke head, taper.
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18"x8" American, bowl head.
18"x8" Greaves-Klusman.
18"x8" Hendey, yoke head.
18"x8" Lodge & Shipley, bowl head.
18"x9" Lehman.
18"x10" Hendey.

19"x10" LeBlond.
20"x8" American, taper.
21"x10" LeBlond, taper.
22"x8" Lodge & Shipley, bowl head.
27"x12" American, bowl head.
28"-56"x12" Putnam Cap.
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36"x18" American, taper.

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No. 4 Cincinnati H. P. Plain, slotted nose, S. P. D. power rapid traverse.
No. 1 Kempsmith Plain.
No. 2 Kempsmith Plain (2).

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No. 6 B. & S. Full Automatic (3).
No. 2G B. & S. serial 6267, M. D. with motor drive slotter, like new.
No. 0 B. & S. serials 5702 to 6564 (3).
2½" Gridley 4 sp. Model "F", M. D.
2¼" Gridley 4 sp. Model "F", M. D.

TURRET LATHES

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GRINDERS

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No. 10 B. & S. Self Cont., S. P. D.
No. 11 B. & S. Self Cont., S. P. D. (4).
No. 1 B. & S. Universal (2).
No. 4A Landis Universal Crankshaft, serial 20, 410.
No. 55 Heald Internal Cylinder.

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- 8" Heald rotary surf., magnetic chuck.

Miscellaneous

- 51" Niles vert boring mill, 2 sw. hds.
- No. 11B Rock River allig. Shear, m. d.
- 50 ton Barnes Screw Press.
- No. 14 Higley Cold Saw.
- 9"x8" Ingersoll-Rand.

Clinton Machinery Co., 33 So. Clinton St., Chicago, Ill.

HIGH QUALITY TOOLS

DRILLS

- 21", 24", 28" & 42" Cincinnati.
- Nos. 216, 314, & 417 Baker.
- Nos. 13, 14 & 30 Natco multiple.
- 5 spindle Detroit automatic.
- 3' & 4' Mueller radial.
- 4', 5', 6' & 8' Western radial.
- 24", No. 3 Aveymatic.

GRINDERS

- Landis, 6"x18" to 16"x72".
- Norton, 6"x32" to 14"x72".
- No. 2 universal Brown & Sharpe.
- No. 2 & 3 Ohio cutter.
- No. 3 Abrasive surface.
- 8", No. 20 Heald surface.
- 1 1/2" Oliver twist drill.
- No. 2 Cincinnati centerless.
- 16"x68" No. 4A Landis crank.
- 10"x36" Norton camshaft.
- Pratt & Whitney worm.
- 30"x84" Diamond face.
- No. 70 Heald internal.
- No. 50 Heald cylinder.
- 18" & 24" Gardner disc.
- 53" Bealy horizontal disc.
- 24" Ingersoll cutter.

LATHES

- 14"x6" & 18"x8" Hendey.
- 14"x6" Cisco, S. P. D.
- 14"x6" American, M. D.
- 16"x6" American.
- 16"x6" Cisco, S. P. D.
- 16"x8" Lodge & Shipley.
- 16"x8" American, M. D.
- 18"x8" Schumacher Boye.
- 18"x8" Lodge & Shipley, S. P. D.
- 20"x8" American, S. P. D.
- 22"x10" Davis.
- 24"x14" Reed Prentice, M. D.
- 27"x12" Schumacher Boye.

MILLERS

- Nos. 1 1/2, 2 & 2 1/2 Rockford.
- Nos. 2, 2M, 3 & 4 Cincinnati.
- Nos. 1 1/2, 2B, & 3B B. & S.
- No. 1 1/2 BS & 2 Milwaukee.
- No. 3 Cincinnati universal.
- Nos. 4B & 6 Becker vertical.
- No. 3 B. & S. vertical.
- 24" & 48" Cincinnati duplex.
- 24" & 48" Newton rotary.
- 48" Ohio tilted offset.
- 26"x24"x6" Ingersoll.

1500 TOOLS IN STOCK. SEND FOR LIST.

MILES MACHINERY CO., Saginaw W. S., Mich.

BORING MILLS

- 2-36"-42" Niles Bement Pond Vertical Turret Lathes, with side heads, A. C. 220 V. motor drive.
- 1-2½" Lucas Horizontal Boring Mill arranged for motor.
- 2-24" Bullard New Era Type Vertical Turret Lathes.
- 1-60" Bullard Vertical Boring Mill, 2 heads, arranged for motor \$750.

MILLING MACHINES

- 2-No. 1-B K. & T., Plain.
- 1-No. 4 Cincinnati, S. P. D. Rapid Traverse.
- 1-No. 4 LeBlond Universal.
- 1-No. 1 Garvin, Universal, Cone.
- 1-No. 2 Brown & Sharpe Universal, S. P. D.

LATHES

- 1-14"x 6' Hendey Tie Bar.
- 1-14"x 6' Bradford, taper attachment.
- 1-14"x 6' Prentice, Geared Head.
- 1-20"x10' Hendey, Geared Head, with taper.
- 2-21"x10' LeBlond, Geared Head taper.

BOLT CUTTERS

- 2" and 2½" Landis; 2" National; 3" Acme with Landis Head.

Large stock of Radial Drills, Planers, Shapers, Grinders, Shop Saws, Air Compressors, Stamping Presses, 3-A W. & S. Hi. Head Type Turret Lathes, 8' 10 Ga. Robinson Toggle Press, 10'x¼" D. & K. Apron Brake, A. C. M. D., 12'x18 Ga. D. & K. Hand Brake.

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FEEDS—Motor Drive.

No. 30 NATCO MULTIPLE DRILL.

3½", 6" AMERICAN RADIAL DRILLS.

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 Grinders, Nos. 2, 3 W. & M. surf. cks.
 Grinder, O. S. Walker surface.
 Grinder, No. 2 B. & S. cutter.
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 Lathe, 12"x6" Hendey, q. c. g., t. a.
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 Lathe, 15"x6" P. & W. engine.
 Lathe, 18"x8" Walcott q. c. g., t. a.
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 Millers, No. 1 Kempnuth univ., equip.
 Millers, No. 1U. S., No. 6 Whit'y hd.
 Millers, No. 2 Cin. pl., vert. & spiral
 att., No. 3 B. & S. pl., arr. m. d.

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 Miller, No. 2 Rock'd plain, s. p. d.
 Miller, No. 2 Garvin duplex.
 Miller, No. 1½ Brown & Sharpe, univ.
 Planer, 24"x24"x6" Gray, 1 head.
 Planer, 30"x30"x6" Gray, 1 head.
 Planer, 30"x30"x6" Pond, 1 head.
 Press, No. 73 W. Bliss.
 Press, No. 20 Bliss, o. b. i. 2" stroke.
 Saw, 6"x6" H. & R. band.
 Scleroscopes, Model "C" Shore.
 Screw mche., No. 1 B. & S. wire feed.
 Screw mche., No. 2 P. & W. hand.
 Screw mchs., No. 00 B. & S. auto.
 Screw mche., No. 0 B. & S. auto.
 Shaper, 16" Cincinnati b. g., rev. table.
 Shaper, 16" Smith & Mills, b. g.
 Shaper, 17" Averbek, b. g., crank.
 Shaper, 16" Gould & Eberhardt, b. g.
 Shaper, 7" Rhodes, crank.
 Shaper, 15" Hendey friction.
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1½" cap. Smurr & Kamen.

21" & 24" Gisholt, ⅝" capacity.
Acme, like new.

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10' Garrison Pow. Press Brake, 16 ga.
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Miller, No. 5 B. & S., plain.
Miller, No. 1 Kempsmith pl., comp.
Miller, No. 2 LeBlond, universal.
Miller, No. 2 Cinc., univ. complete.
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AMERICAN 30"x22' 12-speed head Super-Productive Lathe,
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TOLEDO No. 669 Coining Press; 2000 ton capacity, tie rod construction.

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Fellows No. 6, 61, 65, 615, Shaper.
Fellows No. 7, 71, 712.
Gould & Eberhardt 96H Hobber.
Pfafter No. 4 Hobber.
Jones Superior 78" Hobber.

Grinders:

Landis 6x18, 10x36, 10x72, 10x96.
Norton 10x72; 18x96; 18x120.
Brown & S. No. 1, 2, 3, 13 Univ.

Milling Machines:

Cincinnati No. 2, 3, 4 Horizontal.
Cincinnati No. 2, 3, 4 Vertical.
Cincinnati 24" Duplex Automatic.
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Ingersoll 24x24x18" slab.
Ingersoll 24x24x13" adj. rail, 3 hds.
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14"x72" Norton grinder with countershaft.

Several Cleveland automatics, ½" to ¾", Models A and B.

Note: some of the above presses new in 1930 and used VERY little.

A. D. White Machinery Co., 108 N. Jefferson St.,
CHICAGO, ILL.

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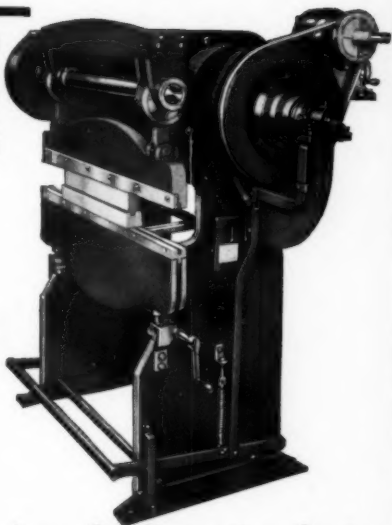
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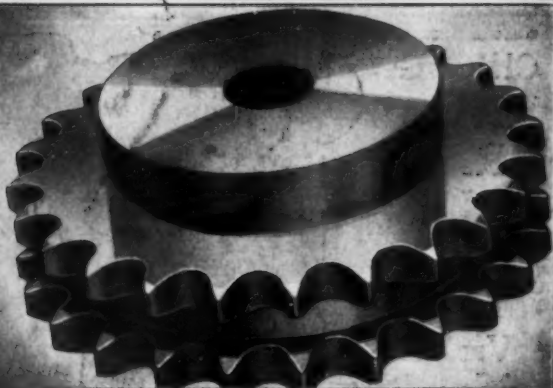


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